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BOTANICAL MAGAZINE,

COMPRISING THE
Plants of the Royal Gardens of Kew,
AND
OF OTHER BOTANICAL ESTABLISHMENTS IN GREAT BRITAIN,
WITH SUITABLE DESCRIPTIONS;

BY

JOSEPH DALTON HOOKER, M.D., C.B., P.R.S., F.L.S., &c.
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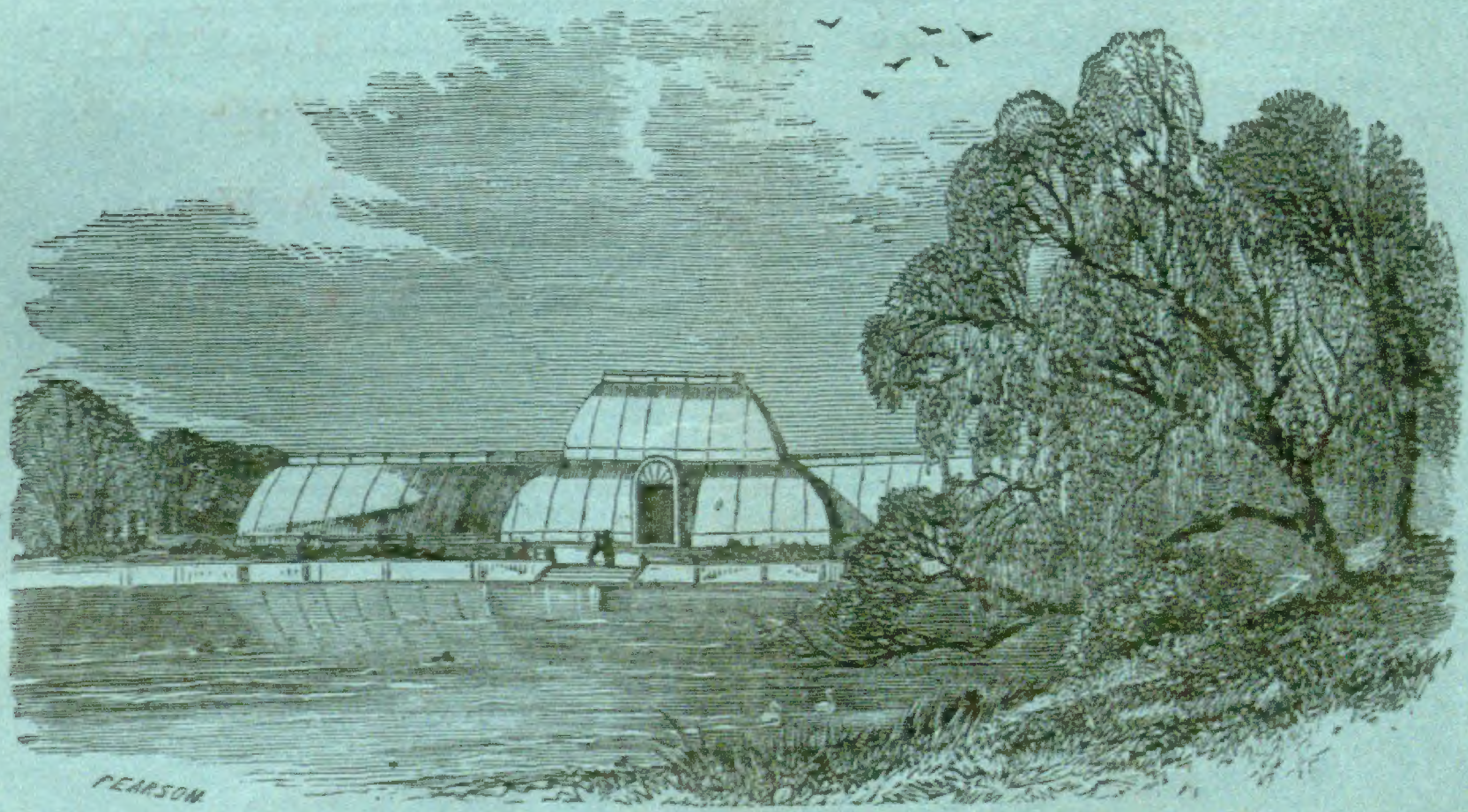

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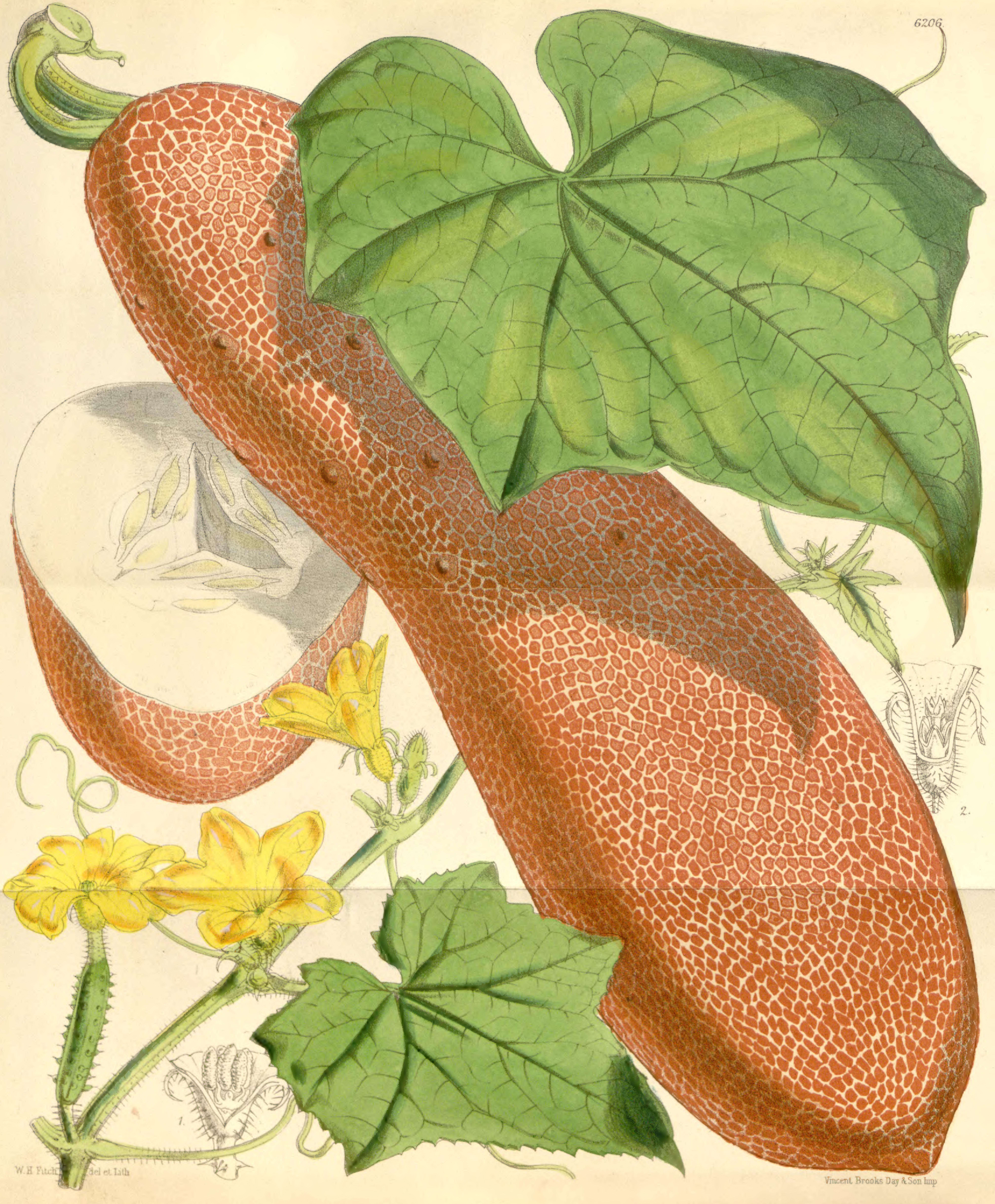

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TAB. 6206.

CUCUMIS SATIVUS, var. SIKKIMENSIS.

Cultivated in the Himalaya Mountains.

Nat. Ord. CUCURBITACEÆ.—Tribe CUCUMERINEÆ.

Genus CUCUMIS, *Linn.* (*Benth. et Hook. f.*, *Gen. Plant*, vol. i., p. 826).

CUCUMIS sativus, *Linn.*, *Naudin in Ann. Sc. Nat.*, ser. 4, vol. xi., p. 27.

Var. *Sikkimensis*, fructu clavato cylindraceo v. obtuse 3-gono lævi v. obscure pustulato colore ochreo plagis parvis brunneis densissime tessellato, placentis 3-5, carne albo.

Concombre de Sikkim, *Naud.*, *l.c.*, 28.

This singular form of the common Cucumber, though very commonly cultivated in the Eastern Himalaya Mountains, appears never to have been noticed horticulturally or botanically till I found it in Sikkim in 1848, and whence I brought drawings and specimens to England. These were described by M. Naudin in 1859, in his essay on the species and varieties of *Cucumis* in the "Annales des Sciences Naturelles," under the name of Concombre de Sikkim, and he says of it that it is the most remarkable variety of the common Cucumber known to him, whether for the length or for the bulk of its fruit, which I have found to attain one and a quarter foot in length and a girth of fifteen inches. It is grown in all parts of the Sikkim and in the Nepal Himalaya, up to 5000 feet elevation, in prodigious quantities. It ripens in July and August, or earlier at lower elevations, when the fruits are sold in the markets and eaten raw by the natives of all ages, as well as cooked. So abundant were they in the year 1848, that for days together I saw gnawed fruits lying by the natives' paths by thousands, and every man, woman, and child seemed engaged throughout the day in devouring them. How far westward its cultivation extends I do not know; Mr. Hodgson informed me that it was as common in Central Nepal as in Sikkim, but curiously enough I find no notice of it in Royle's exhaustive work on the useful plants of the Western Himalaya, though he mentions the Cucumber as being commonly cultivated.

JANUARY 1ST, 1876.

The Sikkim Cucumber was first fruited in England by Major Trevor Clarke, who believed that he had fertilised it with the pollen of the Telegraph Cucumber. By some blunder, perhaps owing to the Melon-like appearance of Major Trevor Clarke's fruit, which was sent to Kew, and from which plants were raised, it is described in the "Gardener's Chronicle" (1875, vol. iv., p. 206-7.) as a hybrid between the Melon and the Cucumber—a cross which has never been effected. On its fruiting at Kew shortly afterwards, I recognised it as my Sikkim plant, and the statement as to its hybrid origin was corrected in a succeeding number of the Chronicle (1875, vol. iv., p. 303). It flowered in the Tropical Economic House in July, and the fruit ripened in August, when it attracted great attention from its size, singular form, and colour. The English-grown specimens have three placentas, but five was as common a number in Sikkim, and I have observed a tendency in old fruits to split longitudinally into three or five fleshy pieces.

In connection with this subject I may mention here that the origin of the common Cucumber, which is supposed to be unknown, is in all probability the *C. Hardwickii*, Royle, of the Himalaya Mountains, which inhabits the sub-tropical region of the range from Kumaon to Sikkim. This opinion, founded on specimens gathered by myself in the latter country, is also adopted by M. Naudin, upon the same materials (Ann. Sc. Nat., l.c., p. 30). The flowers and leaves of the two plants are almost identical, but the fruit of *C. Hardwickii* is small, smooth, and very bitter; it is, however, striped with white and green, a very usual character with the Sikkim cultivated Cucumbers.

Some cultivated Ceylon forms of Cucumber, of which Dr. Thwaites has supplied me with drawings, approach those of the Concombre de Sikkim, but are much smaller, are striped with green and yellow-brown, and the mottling is not so tessellated.—*J. D. H.*

Fig. 1, Calyx of ♀ laid open, and stigmas; 2, calyx of ♂ laid open, and stamens:—*both magnified.*

6207

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TAB. 6207.

NICOTIANA TABACUM, var. FRUTICOSA.

Introduced from Guinea and the Brazils.

Nat. Ord. SOLANACEÆ.—Tribe CESTRINEÆ.

Genus NICOTIANA, *Linn.* (*Benth. et Hook. f., Gen. Plant.*, vol. ii., p. 906 *ined.*).

NICOTIANA *Tabacum*, var. *fruticosa*, glutinoso-pubescens, caule erecto robusto simpliciusculo folioso basi frutescente, foliis sessilibus panduriformi-lanceolatis acuminatis semiamplexicaulibus, inferioribus basi auriculatis, marginibus basin versus obscure undulatis v. sinuatis, floribus paniculatis pedicellatis, bracteis linearibus, calycibus ½-¾-pollicaribus ovoideis 5-fidis, lobis erectis acuminatis, corolla infundibulari pallide rosea limbi 5-fidi lobis triangularibus acutis, capsula ovoidea calycem superante, seminibus fere lævibus.

N. fruticosa, *Linn. Sp. Pl.*, vol. i., p. 258; *Lehm. Nicot.*, p. 23; *Dunal in DC. Prod.*, vol. xiii., pars 1, p. 558.

Nicotiana foliis lanceolatis acutis, &c., *Mill. Gard. Dict.; Figures*, t. 185, fig. 1.

A very little known plant, though introduced into England in the middle of last century, and admirably figured by Philip Miller, F.R.S., Gardener to the Apothecaries Company's Botanic Garden at Chelsea, in his fine folio work illustrative of "the most Beautiful, Useful and Uncommon Plants published in his 'Gardener's Dictionary.'" Miller describes it as growing naturally in Guinea, whence he received the seeds, and as being cultivated in the Brazils and sent to Europe under the name of "Sweet-scented Tobacco." Dunal, in De Candolle's "Prodromus," gives the Cape of Good Hope as its native country on the authority of Linnæus, where, however, no species of the genus has been found in a wild state. For my own part I cannot doubt its being a native of South America, as are all the Tabacum group, and that it has been from thence introduced into Africa and probably elsewhere. I regret to say that I do not know whence our Kew plant was derived; it appeared amongst a miscellaneous set of Tobaccos grown for exhibition in the Economic House, and is supposed to have been sown as Latakia Tobacco from Syria. There are in the Kew Herbarium two cultivated specimens named *N. fruticosa*—one no doubt the true plant, from Gouan's

JANUARY 1ST, 1876.

Herbarium; and the other, from the St. Petersburg Botanic Garden, has slender petioles, a character ascribed to the species by Dunal, but at variance with Miller's figure and description and with our plants. Miller describes it as annual, growing four or five feet high; but our plant, being in a cool house, has survived the last and will, I think, survive this winter. *N. fruticosa* differs from *N. Tabacum* only in the shrubby base of its stem and its narrower leaves, and I think, as Linnæus did, it is a variety of the common Tobacco, which it resembles in habit and inflorescence. The type specimen in the Linnean Herbarium, however, approaches the ordinary form of *N. Tabacum* more closely than either the present plant or that figured by Miller. It flowered in September in a cool greenhouse, the plant being two feet high.

DESCR. *Stem* two feet high and upwards, clammily pubescent, as is the whole plant, stout, erect, simple, woody at the base. *Leaves* a foot long and under, sessile, panduriform-lanceolate, acuminate, sessile, the upper semiamplexicaul, the lower auricled at the base, margins slightly waved, chiefly towards the base. *Flowers* in terminal panicles, pedicelled, inclined; bracts linear. *Calyx* ovoid, 5-cleft, one-third to two-thirds of an inch long, lobes acuminate. *Corolla-tube* twice as long as the calyx; limb one to one and a quarter inch broad, pale rose-coloured; lobes broad, acute. *Capsule* exceeding the calyx, ovoid. *Seeds* minute, very obscurely reticulate.—*J. D. H.*

Fig. 1, Corolla laid open; 2, pistil:—*both magnified.*

6268.

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TAB. 6208.

MASDEVALLIA EPHIPPIUM.

Native of New Grenada.

Nat. Ord. ORCHIDEÆ.—Tribe PLEUROTHALLIDEÆ.

Genus MASDEVALLIA, *Ruiz et Pav.* (*Lindl., Gen. et Sp. Orchid.*, p. 192).

MASDEVALLIA *Ephippium;* foliis cum petiolo 5-7 pollicaribus, lamina anguste elliptico-oblonga obtusa apice recurvo in petiolum validum breviorem angustata, medio superne canaliculato et subtus valide costato, nervis lateralibus 2, scapo valido triquetro folia longe superante, bractea obovata compressa complicata apiculata, sepalo dorsali parvo rotundato in caudam flexuosam 5-pollicarem reflexam abrupte angustato flavo, lateralibus in laminam cymbiformem costatam rufo-castaneam cuneatis, apicibus in caudas 4-pollicares flavas basi contiguas dein divaricatas abrupte angustatis, petalis columnam vix superantibus late linearibus apice 3-dentatis, labello unguiculato, lamina oblonga apiculata brunneo-maculata, ungue apici 2-auriculata.

M. Ephippium, *Reichb. f. in Bot. Zeit.*, 1873, p. 390; *Xenia Orchid.*, vol. ii., p. 213, t. 195; *Gard. Chron.*, 1874, p. 372.

M. Trochilus, *Lind. et André*, Rev. Hortic., t. 180.

Dr. Reichenbach, to whom I am indebted for the references to this species, observes of it that it is a highly curious one; and it is indeed very different from any hitherto figured in this work, especially in the lateral sepals, that form a deeply concave bowl-shaped body, of a remarkable rufous-brown colour, and are thoroughly united even to the base of their long tail-like tips, which curve away from one another in a singular manner. The inside of the united sepals is, moreover, traversed by five corrugated ribs or keels, that meet at the apex of the body, leaving deep concavities between them.

I am indebted to Mr. J. T. Barber, of the Old Hall, Spondon, Derby, for the opportunity of figuring this fine species, which he sent to Kew in March last, with the information that it was grown in a house with a day temperature of 65 deg. Fahr., and a night one of 52 deg. to 60 deg., and was watered but sparingly, a flower having been spoiled previously by over-watering. Dr. Reichenbach states that it was first discovered at Loxa by the late Dr. Krause, who sent it to Messrs. Backhouse, and that it has subsequently been

JANUARY 1ST, 1876.

obtained from Antioquia and Medellin by Mr. Wallis and others.

Descr. A remarkably robust species. *Leaves*, with the petiole, 5-7 inches long; blade, 1-1½ inch in diameter; narrowly elliptic-oblong, with an obtuse recurved tip; 3-nerved, grooved down the centre above, with a strong midrib and two lateral nerves beneath; base narrowed into the petiole, which is 2-3 inches long. *Peduncle* a foot high, very stout, flexuous, sharply 3-4-angled; bracts 1 inch long, obovate, complicate, compressed, apiculate. *Flower* nearly a foot long, from the tip of the upper to that of either lateral sepal. *Upper sepal* small, ½ inch in diameter, orbicular, yellow with faint brown cloudings, suddenly contracted into a long reflexed yellow slender tail. *Lateral sepals* cuneate, with a deep boat-shaped, almost hemispheric chestnut-brown cup, 1¼ inch in length and 1 inch in diameter, with 5 ridges, which are green outside, but deeper and wrinkled within; tips of the sepals cuneate at the base, then diverging, 5 inches long, yellow. *Petals* straight, broadly linear, 3-toothed at the tip, rather longer than the column. *Lip* very small, red-brown, and speckled; claw stout, straight, as long as the oblong, apiculate, toothed blade, at the base of which are two lobules.—*J. D. H.*

Fig. 1, Flower with a lateral sepal removed; 2, column and petal; 3, lip:—*all magnified.*

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TAB. 6209.

BLANDFORDIA FLAMMEA, var. PRINCEPS.

Native of New South Wales.

Nat. Ord. LILIACEÆ.—Tribe HEMEROCALLIDEÆ.

Genus BLANDFORDIA, *Smith* (*Baker in Journ. Linn. Soc.*, vol. xi., p. 361).

BLANDFORDIA *flammea*, var. *princeps;* foliis distichis anguste linearibus, venis exsculptis 6-8, marginibus distincte serrulatis, caule pedali foliis depauperatis bracteato, corymbo 4-10-floro, bracteis parvis lanceolatis, pedicellis ascendentibus 1-2 poll. longis, perianthio splendide coccineo 2½ poll. longo regulariter infundibulari, segmentis luteis ovato-deltoideis imbricatis, filamentis declinatis infra medium tubi insertis, pistillo incluso, gynophoro elongato ovario triquetro æquilongo.

B. princeps, *Hort. Bull; Floral Mag. N.S.*, tab. 170.

Botanically not more than a variety of *B. flammea*, Bot. Mag., tab. 4819, from which it differs by its larger flowers, with the tube of the perianth narrowed gradually from the throat to the base, and passing so gradually into the pedicel that it is difficult to see, without cutting it open, where one stops and the other begins, and by its included pistil. For horticultural purposes it is a much finer plant, the bright crimson of the tube and pedicel forming a very effective contrast with the bright yellow of the segments; so that, size of flower and colouring both taken into account, it may safely be said to be for decorative purposes the finest of the known Blandfordias. It was introduced by Mr. William Bull from New South Wales, about 1873, and was exhibited by him at South Kensington in the summer of 1875.

DESCR. *Root-fibres* fleshy, cylindrical. *Leaves* about a dozen, distichous, stiff, suberect, a foot long, under a quarter of an inch broad, with six to eight strong ribs and a distinctly serrulate border. *Scape* a foot high, bracteated by several reduced leaves. *Flowers* four to ten in a corymb, on ascending bright red pedicels one to two inches long. *Bracts* small, lanceolate. *Perianth* pendulous, regularly funnel-shaped, expanded gradually from the base to a throat under an inch broad, the tube bright crimson on the outside, the yellow ovate-deltoid segments three-eighths to half an inch broad and deep. *Stamens* inserted below the middle of the tube and reaching to its throat; filaments filiform, declinate; anthers small, oblong. *Pistil* reaching to the throat of the tube at the flowering time; gynophore as long as the triquetrous ovary.—*J. G. Baker.*

Fig. 1, Complete pistil:—*slightly magnified.*

6210.

W.H.Fitch del. et Lith.

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TAB. 6210.

ANDROSACE SARMENTOSA.

Native of the Himalaya.

Nat. Ord. PRIMULACEÆ.—Tribe PRIMULEÆ.

Genus ANDROSACE, *Linn.* (*Benth. et Hook. f.*, *Gen. Plant.*, vol. ii., p. 632 *ined.*).

ANDROSACE *sarmentosa*, laxa sericeo-pilosa, sarmentis elongatis nudis undique ab caule perbrevi patentibus robustis, declinatis apicibus tantum foliosis, caule brevissimo, foliis dense rosulatis obovato-lanceolatis obtusis integerrimis, in petiolum brevem angustatis, scapo erecto, involucri foliolis numerosis angustis latisve interdum foliaceis, calycis lobis oblongis obtusis, corollæ tubo brevi globoso, limbi rosei lobis patentibus rotundatis, ore albido fornicibus clauso, capsula oblonga calycem superante.

A. sarmentosa, *Wall. in Roxb. Fl. Ind. Ed. Carey*, vol. ii., p. 14; *Cat.*, n. 614; *Chois. in DC. Prod.*, vol. viii., p. 49.

An interesting addition to the collection of rock-work plants, hardy and a very free grower. It is a native of the loftier regions of the Western Himalaya, and was first found in Central Nepal, whence it was sent to Dr. Wallich, then in Calcutta, about the year 1820, by the Resident at the Nepalese Court, the Hon. E. Gardner. Since that period it has been found further west by Mr. Edgeworth, in Kumaon, at an elevation of 11-12,000 feet, and on the Zoji La Pass, north of Kashmir, by Dr. Thomson, at about the same height above the sea. Our plant was raised from seed collected by Dr. Bellew (who accompanied Forsyth's mission to Yarkand), at the same locality as Dr. Thomson's came from, and it was flowered first and beautifully by Mr. Isaac Anderson Henry, at Hay Lodge, Trinity, Edinburgh, and subsequently at Kew, but in far less perfection than in the northern clime. As a spring bloomer, flowering in April, it will prove a most welcome accession to the hardy herbaceous border, and it is propagated with great ease by its runners, which spread all round the plant and hang over the sides of the pot in profusion. As a species, *A. sarmentosa* in the form figured differs much from any other *Androsace*, but amongst the varieties of the far more common *A. lanuginosa*, Wall. (Tab. nost. 4005), which inhabits the same country and elevations, are some that are with difficulty distinguished. As a rule, however, *A. lanuginosa* is a far more densely silky plant, almost silvery-white, with a tufted habit, spreading branches, and very leafy runners that branch again and again; its leaves too are more acute. Choisy reduces *lanuginosa* to *sarmentosa*, not even considering it to be a variety; but I cannot think that he would have done this had he had sufficient materials to work with.

DESCR. More or less clothed with lax, spreading, silky hairs. *Stem* very short. *Runners* numerous from the axils of the leaves, spreading all round, four to six inches long, declinate, red-purple, quite leafless except at the tips, which bear heads of rosulate leaves. *Leaves* rosulate, densely crowded, the lower on the very short stem smaller, imbricate, and recurved, the upper one to two inches long, oblanceolate, obtuse, narrowed into the short petiole. *Scape* usually solitary, erect, many-flowered. *Involucre* of many leaflets, which are extremely variable in shape and size, sometimes small and linear, at others broad and leaf-like. *Pedicels* slender. *Calyx-lobes* oblong, obtuse. *Corolla* one-third to two-thirds of an inch in diameter, rose-coloured, deeper towards the disk, which is pale yellow; mouth almost closed by the thickened scales; lobes rounded, quite entire. *Capsule* oblong, longer than the calyx.—*J. D. H.*

Fig. 1, Flower; 2, corolla laid open; 3, calyx laid open, showing the pistil:—*all magnified.*

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BOTANICAL MAGAZINE.

CONTENTS OF No. 373, JANUARY, 1876.

Tab. 6206.—CUCUMIS SATIVUS, var. SIKKIMENSIS.
„ 6207.—NICOTIANA TABACUM, var. FRUTICOSA.
„ 6208.—MASDEVALLIA EPHIPPIUM.
„ 6209.—BLANDFORDIA FLAMMIA, var. PRINCEPS.
„ 6210.—ANDROSACE SARMENTOSA.

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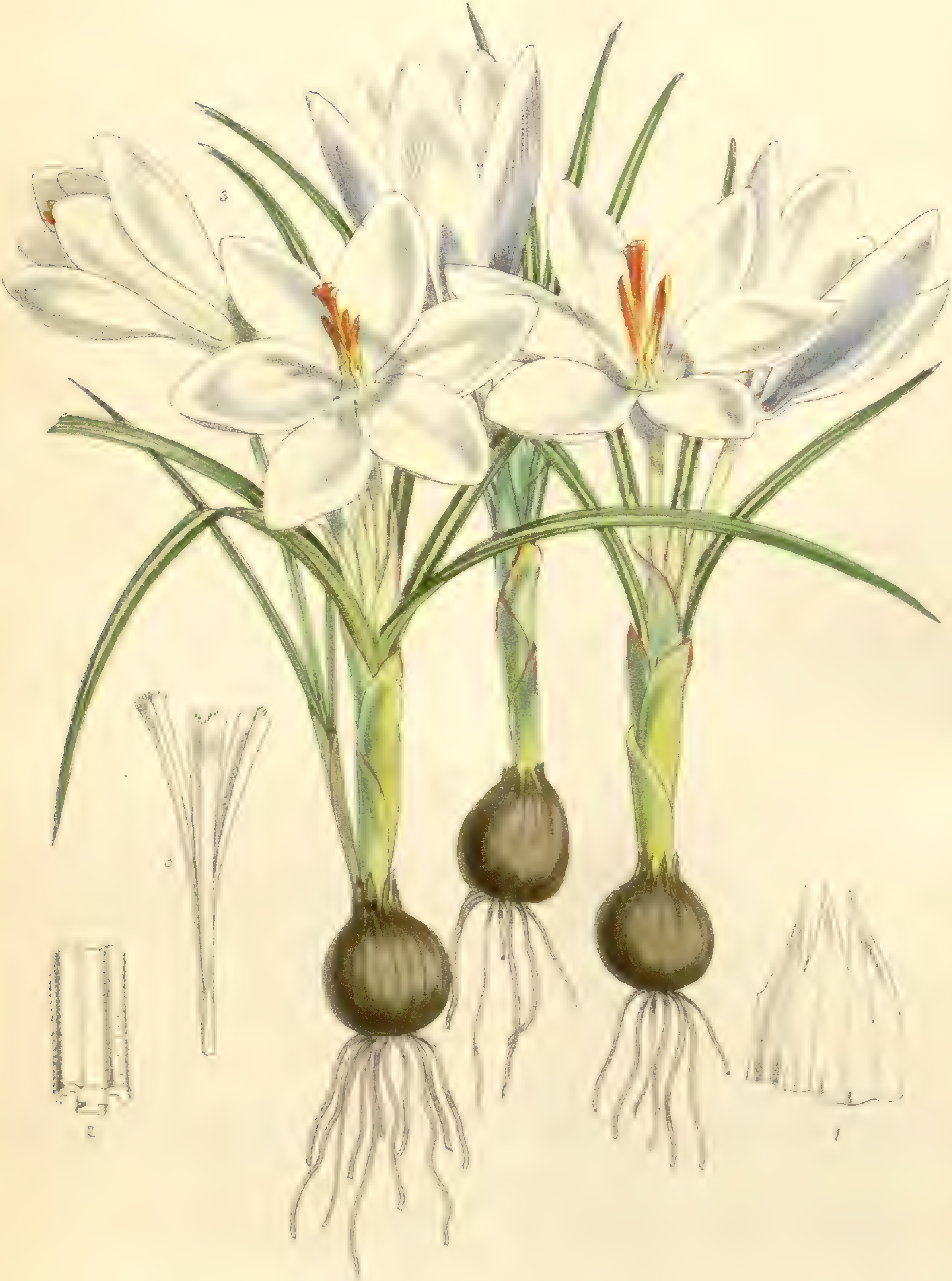

W H Fitch del et Lith

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TAB. 6211.

CROCUS WELDENI.

Native of Dalmatia.

Nat. Ord. IRIDACEÆ.—Tribe IXIEÆ.

Genus CROCUS, *Linn.* (*Baker in Gard. Chron.*, 1873).

CROCUS *Weldeni*; vernalis, cormi tunicis membranaceis supra basin circumscissis, spatha basali nulla, foliis 4-5 synanthiis angustis vittatis margine revolutis, spathæ propriæ valvis oppositis lanceolatis, perianthii tubo albo, limbi segmentis oblongis facie albis, exterioribus dorso purpureo tinctis nullo modo striatis, fauce glabra concolori, antheris citrinis, filamentis brevibus albis glabris, stigmatibus integris fulvis.

C. Weldeni, (*Hoppe?*), *Bot. Zeit.*, 1840, p. 208; *J. Gay*, *Herb.*

C. biflorus, *Visiani, Fl. Dalm.*, i., 119, *non Miller.*

C. annulatus, var. albus, *Herbert in Journ. Hort. Soc.*, vol. ii., p. 208.

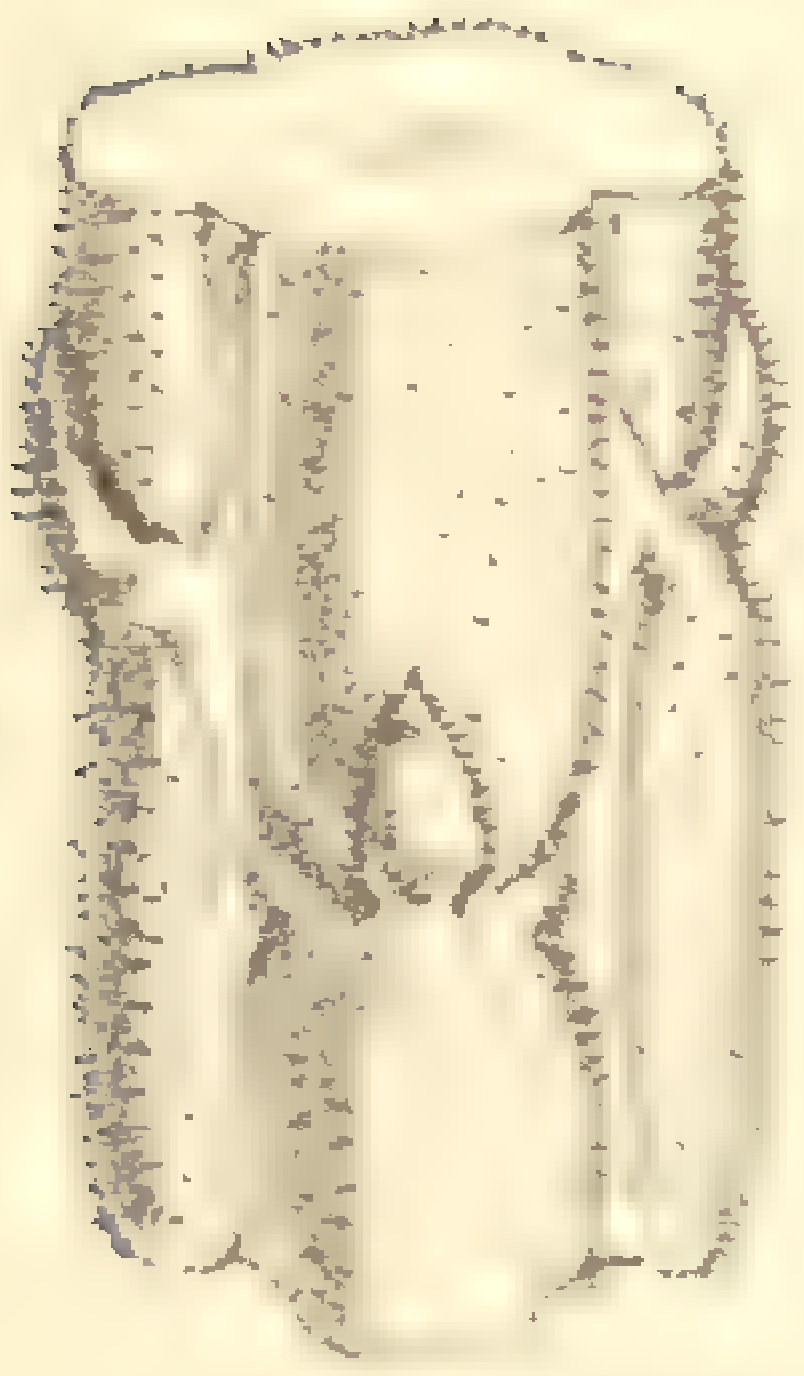
This can scarcely be considered as more than a variety of *Crocus biflorus*, with which it agrees in time of flowering, leaves, and corm-structure. The flower is less showy than those of either the old garden *biflorus* or the two wild Italian varieties (*lineatus* and *pusillus*), being entirely without stripes, concolorous at the throat, and white, except that the three outer segments are marked on the outside with a more or less decided hue of slaty-purple. It is a native of the limestone hills of Dalmatia, flowering in January and February. In our English gardens it does not expand till March. The drawing was made from specimens that flowered at Kew in 1874, which were presented to the garden by the Rev. H. Harpur-Crewe, who received it from Trieste from Major R. F. Burton.

DESCR. Vernal. *Corm* globose, the numerous membranous tunics slitting off just above the base, and sliced into lanceolate teeth at the top. *Basal spathe* none. *Leaves* four to five, contemporary with the flower, very narrow, distinctly vittate. *Proper spathe* of two equal lanceolate valves. *Tube of perianth* white, one and a half to two inches long; segments of limb oblong, about an inch deep, white inside,

the three outer with a more or less decided dash of slaty-purple on the back, the throat glabrous and concolorous. *Anthers* lemon-yellow, half an inch long, much exceeding the white glabrous filaments. *Stigma* fulvous, overtopping the stamens, with three entire clavate branches.—*J. G. Baker.*

Fig. 1, Outer tunic of corm; 2, portion of leaf; 3, stigmas:—*all magnified.*

6212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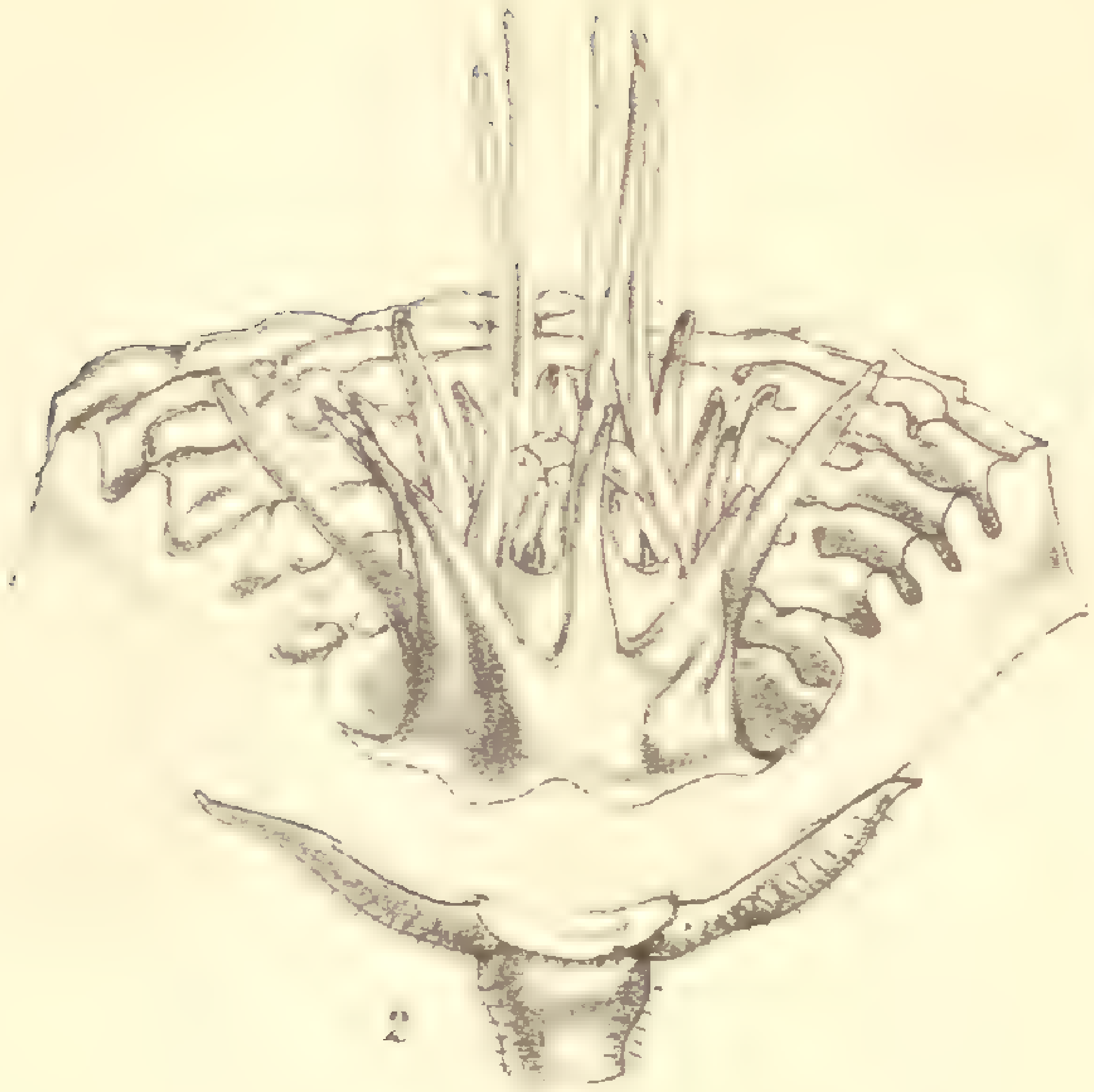
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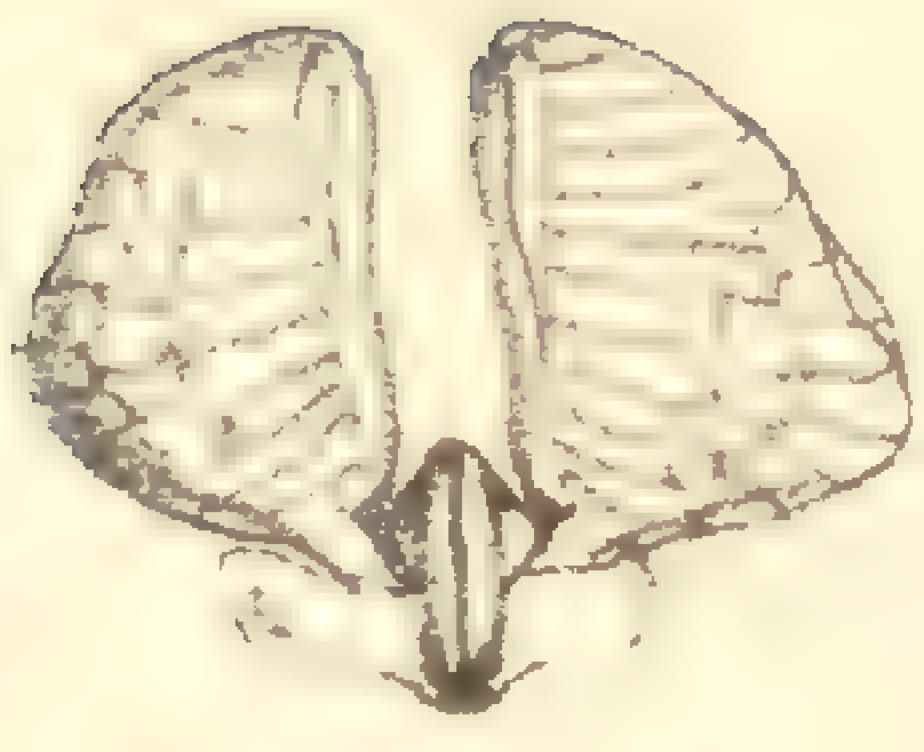
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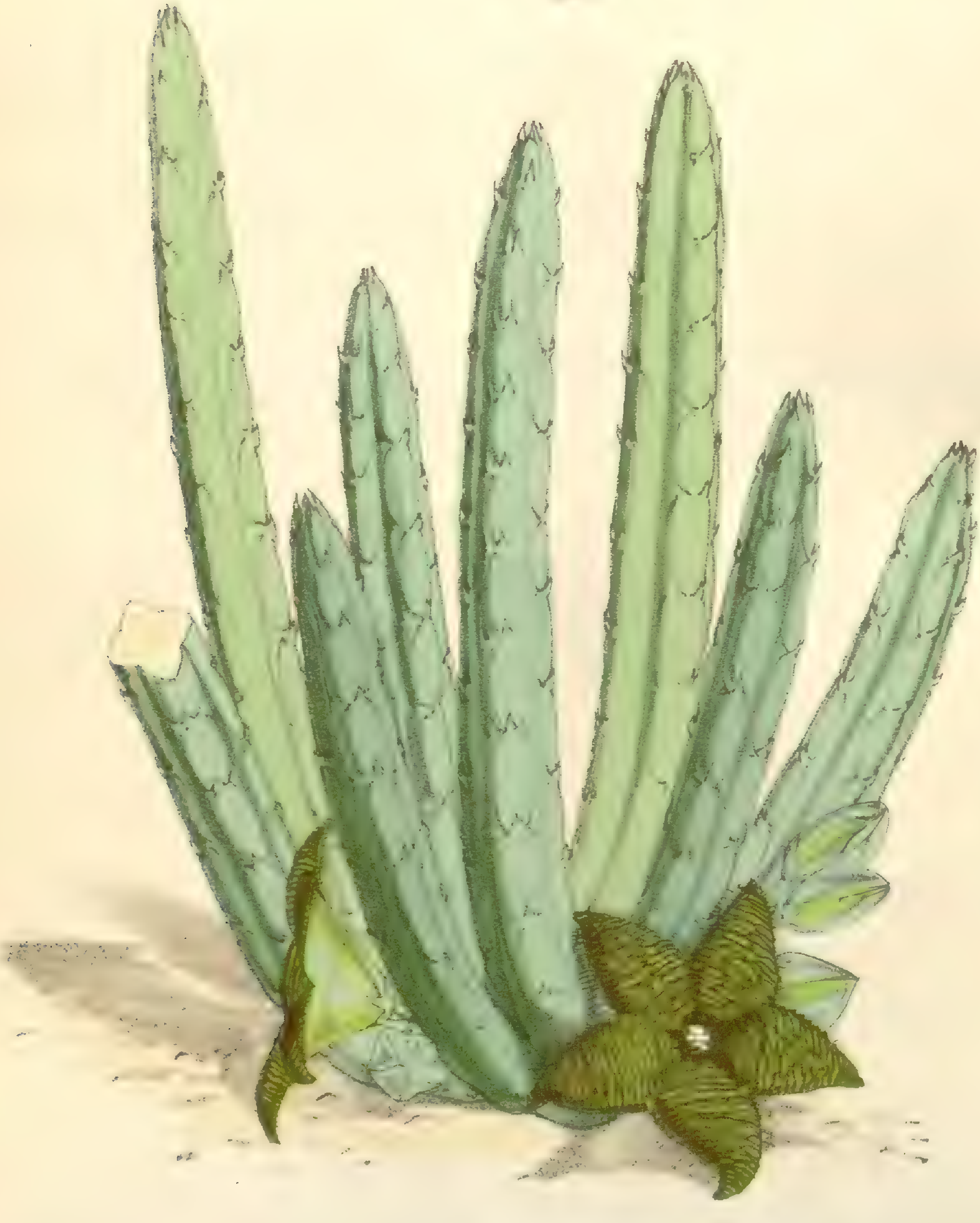

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TAB. 6212.

STAPELIA OLIVACEA.

Native of South Africa.

Nat. Ord. ASCLEPIADEÆ.—Tribe STAPELIEÆ.

Genus STAPELIA, *Linn.* (*Benth. et Hook. f., Gen. Plant.*, vol. ii., 784 *ined.*).

STAPELIA *olivacea;* ramis rectis gracilioribus minute puberulis 3-5-pollicaribus cinereo-virentibus purpureo-maculatis tetragonis angulis obtusis ad insertiones dentorum transversim constrictis, dentibus parvis triangularibus appressis, floribus ramos ad imos juniores insitis minime pedunculatis, calycis puberuli segmentis minimis subulatis, corolla fœtidissima diametro sesquipollicari profunde quinquefida extus sordide viridi puberula, intus glabra rugis crebris instructa olivaceo-brunnea lobis ovatis acutis 5-nerviis albo-ciliatis, coronæ exterioris squamis anguste oblongis acutis purpureo-brunneis linea centrali ornatis, interioris duplo longioribus cornubus falcato-subulatis instructis attenuatis paullo recurvis omnibus purpureo-brunneis.

S. olivacea, *N. E. Brown in Gard. Chron.*, 1875, iii., p. 136.

This interesting species appears to have been known for some little time in gardens as *Stapelia eruciformis*, although there seems to be some doubt whether that name does not belong to another species (Gard. Chron., 1875, iii., p. 206). It was sent to Kew by H.E. Sir Henry Barkly in April, 1874, where it flowered in September following, and was first described by Mr. Brown, assistant in the Herbarium of the Royal Gardens, in the "Gardener's Chronicle" in January of last year. The following description is in great part adopted from Mr. Brown.

DESCR. *Stems* erect, rather slender, branching at the base, minutely puberulous, three to five inches high, three-eighths to half an inch thick, tetragonal, with rounded angles, transversely constricted at the base of the minute lanceolate appressed teeth, greyish green, becoming blotched with purple on full exposure to the sun. *Flowers* two to six from the bases of the younger branches; peduncles two to three lines long, puberulous, green. *Calyx* five-partite, puberulous; segments two to two and a half lines long, subulate. *Corolla* very fœtid, about one and a half inch in diameter, dull green and puberulous externally, glabrous within, with numerous crowded brown transverse rugæ on a dark olive-green or

FEBRUARY 1ST, 1876.

sometimes pale olive ground; lobes ovate, acute, recurved, five-nerved, fringed with white hairs. *Scales* of external corona narrowly oblong, one-eighth of an inch long, dark purple-brown, with a smooth polished central line; scales of inner corona twice as long, attenuate, dark purple-brown, with falcate-subulate dorsal processes.—*W. T. T. D.*

Fig. 1, Portion of branch; 2, section of corolla with corona, the dorsal processes of the segments of the inner series have not been made sufficiently distinct from the segments of the outer series; 3, pollen-masses:—*all magnified.*

6213.

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TAB. 6213.

CYPELLA PERUVIANA.

Native of Peru.

Nat. Ord. IRIDACEÆ.—Tribe IRIDEÆ.

Genus CYPELLA, *Herb.* (*Klatt in Linnæa*, vol. xxxi., p. 538).

CYPELLA *peruviana;* bulbo ovoideo tunicato, foliis 2-3 caulinis membranaceis linearibus plicatis, spathis solitariis 2-3-floris terminalibus, spathæ valvis membranaceis arcte convolutis, ovario parvo cylindrico, perianthii limbo magno luteo prope basin rubro-brunneo maculato, segmentis ad basin liberis exterioribus patulis rotundato-unguiculatis, interioribus multo minoribus panduriformibus convolutis medio facie pilosis, stigmatibus luteis petaloideis bifidis, staminibus erectis stylo adpressis.

This handsome Irid, new so far as I can make out, was introduced in 1874 by Messrs. Veitch from the Peruvian Andes. It does not agree with the six species of *Cypella* described by Klatt in his monograph above cited either in habit or precisely in stigma. They are all natives of Brazil, and have spathes produced from the side of great ensiform iris-like leaves. Here the habit is substantially that of *Phalocallis*, *Polia*, or *Beatonia*, but in all these the stigmas are materially different. These South American Irids are very difficult to study, the flowers being so fugacious in a living state, and seldom represented in a satisfactory manner in herbarium specimens. We have in the Kew Herbarium specimens of either the same plant or a closely allied one from the temperate region of the Bolivian Andes, in grassy places, near Sorata, gathered by Mandon.

DESCR. *Bulb* ovoid, clothed with scarious brown tunics. *Basal leaves* vanished by the time the plant flowers. *Stem-leaves* two to three, linear, six to nine inches long, one-half to three-quarters inch broad, narrowed gradually from the middle to both ends, glabrous, papyraceous, plicate. *Flowers* two to three in a solitary stalked terminal cluster, fugacious, and appearing in succession from the spathe. *Spathe-valves* two, membranous, tightly convolute round the pedicels. *Ovary* green, fusiform, half an inch long. *Limb* bright yellow, maculate at the base with red-brown, the divisions free down to the ovary, the outer three much the largest, straight, spreading, with a round limb and a cuneate claw, the inner three panduriform, convolute, with a round reflexed blade, strap-shaped centre pilose on the face, and a navicular claw. *Genitalia* forming an erect column. *Stigmata* bifid, petaloid, bright yellow, with a third small process between the two large iris-like divisions. *Stamens* pressed against the style, the short filaments nearly or quite free.—*J. G. Baker.*

Fig. 1, Inner segment of perianth:—*magnified.*

6214

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Tab. 6214.

Pescatoria Dayana, var. rhodacra.

Native of New Granada.

Nat. Ord. Orchideæ.—Tribe Vandeæ.

Genus Pescatoria (*Reich. f. in Mohl et Schlecht. Bot. Zeit.*, vol. x., p. 667 [1852]).

Pescatoria *Dayana*, var. *rhodacra;* pseudobulbis 0, foliis sessilibus anguste oblanceolato-oblongis acuminatis, pedunculis brevibus validis 1-floris, bracteis brevibus viridibus oblique truncatis, floribus 2½ poll. diametr., sepalis oblongis obtusis concavis niveis apicibus sanguineis, petalis triente minoribus obovatis concavis dorso sub apice roseis, labello explanato ungue brevi lamina rotundata convexa alba roseo suffusa, crista crassa semicirculari plicata violacea, columna crassa naviculari exalata alba, anthera coccinea, stigmate luteo.

P. Dayana, *var.* rhodacra, *Rchb. f. in Gard. Chron.*, 1874, pt. 2, p. 226.

The nearest ally of this Orchid is assuredly the *Huntleya cerina*, Lindl. (Tab. nost. 5598), which differs conspicuously in colour and in the form of the semi-circular callus at the base of the limb of the lip, and which is referred, along with other species of *Pescatoria*, to a section of the old genus *Zygopetalum*, Hook., by the younger Reichenbach, in the sixth volume of Walper's "Annales," p. 651. The said section is, however, characterised by having a slender semi-cylindric column, whilst the column both of *P. cerina* and of *P. Dayana* is broad and boat-shaped, as in *Bollea* (Reichenbach's first section of *Zygopetalum*). In the present state of Orchidology it is not possible for the Botanist or the Horticulturist to speak with confidence of generic limits in any considerable group. I have retained this under *Pescatoria*, following Reichenbach (in the "Gardener's Chronicle," l.c.), by whom the genus (usually wrongly written *Pescatorea*) was founded. As above observed, however, this genus has been referred by him to *Zygopetalum* as long ago as 1861, together with *Bollea*, *Warscewiczella*, *Warrea*, *Kefersteinia*, and *Promenæa*.

Pescatoria Dayana has several varieties in cultivation, depending on the markings on the perianth being absent, or violet, or green, or red. That here figured was communicated by Messrs. Veitch in September, 1874, and a perfectly similar plant, but without red tips to the sepals and petals, was sent by Mr. Bull the previous June.

DESCR. *Stems* tufted, without pseudobulbs, the short thickened leaf-sheaths below the articulation not appearing to become fleshy and to perform the functions of a pseudobulb. *Leaves* six to ten inches long by two inches broad, narrowly oblanceolate-oblong, acuminate, keeled, obscurely nerved. *Peduncle* one-flowered, stout, two to three inches long, green, with one small green obliquely truncated bract towards the middle, and a much larger brown appressed one embracing the ovary. *Flowers* two inches and a half in diameter. *Sepals* oblong, obtuse, concave, white, with bright red tips. *Petals* one-third smaller, obovate, obtuse, with rosy spots at the tip on the back. *Lip* orbicular, with a short claw and convex limb, which is white suffused with crimson; at the base of the limb is a deep semi-circular canal bounding a semilunar violet plaited callus. *Column* short, broad, stout, not winged, white, with a crimson anther and yellow stigma.—*J. D. H.*

Fig. 1, Lip :—*magnified.*

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VIBURNUM DILATATUM.

Native of Japan.

Nat. Ord. CAPRIFOLIACEÆ.—Tribe SAMBUCEÆ.

Genus VIBURNUM, *Linn.* (*Benth et Hook. f.*, *Gen. Plant.*, vol. ii., p. 3).

VIBURNUM *dilatatum;* ramulis petiolis inflorescentia nervisque foliorum subtus substrigoso-hirtis, foliis petiolatis ovato- v. obovato- orbiculatis obtuse acuminatis grosse dentatis subrugosis, stipulis 0, cymis multifloris breviter v. longius pedunculatis, floribus omnibus consimilibus, calycis lobis rotundatis ciliatis, corollæ rotatæ lobis rotundatis dorso pilosis, filamentis corollam superantibus, stigmate obtuse-trilobio, fructu ovoideo compressissimo.

V. dilatatum, *Thunb.*, *Fl. Jap.*, p. 124; *DC. Prod.*, vol. iv., p. 329; *Sieb. et Zucc.*, *Fl. Jap.*, vol. i., p. 172; *A. Gray*, *Bot. Japan*, p. 393 (*excl. Syn. V. erosi*); *Miquel*, *Prol. Fl. Jap.*, 154.

A very handsome hardy shrub, with apparently a wide distribution in Japan, having been collected in various localities from Nagasaki and Yokohama to Hakodadi—that is, nearly throughout the length of the archipelago.

The genus *Viburnum* is well represented in Japan, and there are several species that have not yet been introduced into Europe. Thunberg, in 1787, described no less than nine Japanese ones, and Miquel, in his "Prolusio Floræ Japonicæ," enumerates twelve. Several of these are very widely spread over the northern hemisphere; amongst them is our Guelder Rose (*V. Opulus*), also the American *V. lantanoides*, which extends into the Himalaya. The long-known *V. odoratissimum* of our garden also extends into India, being found in the Khasia Mountains. *V. Sandankewa* again, figured in our last year's volume (Tab. 6172), is very closely allied to a Himalayan species.

V. dilatatum was introduced by Messrs. Veitch, who sent flowering specimens for figuring to Kew in June last, with the information that it is perfectly hardy. It is omitted in Oersted's monograph of the genus (Kiöb. Vidensk. Meddel., 1860.)

DESCR. A shrub with the young branches, petioles, inflorescence, and nerves of leaves beneath clothed with rigid, white, simple, and forked, rather spreading hairs, which become tomentose in the axils of the petioles, of the branches of the panicles, and of the nerves of the leaves where they join the midrib. *Leaves* very variable in size and shape, two to five inches long, often as broad, orbicular or orbicular-ovate or obovate, usually abruptly terminating in an obtuse point, coarsely toothed, slightly hairy on both surfaces; nerves numerous, nearly parallel; base rounded or cordate at the junction with the petiole, which is rarely more than half an inch long; stipules none. *Cymes* sessile or on stout peduncles, much branched, two to six inches in diameter. *Flowers* white, very shortly pedicelled, one-third of an inch in diameter. *Calyx* pilose, tube obscure, lobes orbicular. *Corolla* rotate, lobes orbicular, hairy on the back. *Stamens* exserted. *Style* stout, curved, stigma three-lobed. *Fruit* ovate, much flattened, about one-third of an inch long, crowned by the persistent calyx-lobes and style.—*J. D. H.*

Fig. 1, Flowers; 2, the same with the corolla removed:—*both magnified.*

6276

Tab. 6216.

SENECIO (Kleinia) CHORDIFOLIA.

Native of South Africa.

Nat. Ord. Compositæ.—Tribe Senecionideæ.

Genus Senecio, *Linn.* (*Benth. et Hook. f.*, *Gen. Plant.*, vol. ii., p. 446).

Senecio (*Kleinia*) *chordifolia*; suffruticosa, glaberrima, caule gracili erecto simpliusculo, foliis 7-10-pollicaribus chordiformibus teretibus subacutis, cymis elongatis laxis remote furcatis paucifloris, ramis erectis 3-5-pollicaribus, bracteis ad axillas parvis subulatis, capitulis $\frac{1}{2}$-$\frac{2}{3}$ pollicaribus angustis cylindraceis basi bracteolis paucis patentibus setaceis instructis, foliolis ad 15 linearibus acuminatis marginibus membranaceis, floribus flavis, corollæ lobis brevibus, styli ramis apice truncatis, achenio cylindraceo pubescente.

A very curious succulent Groundsel, remarkable for the great length of its simple, terete, cylindrical leaves, which droop from the long, slender branches, and for the lax, slender, very few-flowered cymes. I find no species described in Harvey and Sonder's "Flora of the Cape" with which it can be confounded, though it is evidently nearest to *Kleinia crassulæfolia*, DC. (not of Baker in Saunders' Refug., vol. i., t. 7), in which, however, the leaves are only two to three inches long.

The *Kleinias* of Haworth, and, following him, of De Candolle and Harvey, are, with the exception of one or two North African and Arabian species, all South African, and comprise two sets of plants. Of these one set has conical tips to the style-arms, and often a more rigid pappus; the other has truncated tips to the style-arms and a soft pappus. To the former, which differs in no way from the Indian genus *Notonia*, belong *K. Anteruphorbium* (figured in last year's volume of the Magazine, Tab. 6099, under *Senecio*) and *K. fulgens* (Tab. nost. 5590); whilst to the latter belongs *K. Haworthii* (Tab. nost. 6063, *Senecio*), together with this and other species. Bentham (Gen. Plant., vol. ii., p. 449) has rightly merged *Kleinia* into *Senecio*, and noted its passing into *Notonia*, which latter genus must no doubt follow it; the Indian plant being regarded as an outlier of this succulent

February 1st, 1876.

group of *Senecio*, which extends from Marocco and the Canary Islands to Arabia, and thence to India.

S. chordifolia is one of Mr. Cooper's South African discoveries; he found it at Busghersdorf, in the Albert province, in 1861. It flowered at Kew in July, 1874; the specimen was presented by Mr. Kennedy.

DESCR. A very slender, glabrous, fleshy plant, about a foot high, with a very sparingly branched stem that is woody towards the base. *Leaves* seven to ten inches long by a quarter of an inch in diameter, acute, cylindric, but flattened above towards the base, terete, smooth, pale green, drooping. *Cymes* very slender, six to ten inches long, sparingly forked, the branches erect, very long, with small subulate green bracts at the forks; terminal pedicels slender, two to three inches long, lateral very short. *Heads* very few, two-thirds of an inch long, narrow. *Involucre* green, with a few bristle-shaped, spreading bracteoles at the base; leaflets about sixteen, linear, acute, with membranous margins. *Flowers* yellow. *Corolla-lobes* very short. *Style-arms* truncate. *Pappus* very soft, white, and slender. *Achenes* slender, pubescent.—*J. D. H.*

Fig. 1, Whole plant, *reduced;* 2, branch, leaves, and cyme, *of the natural size* 3, flower; 4, stamen; and 5, style-arms:—*all magnified.*

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BOTANICAL MAGAZINE.

CONTENTS OF No. 374, FEBRUARY, 1876.

TAB. 6211.—CROCUS WELDENI.
,, 6212.—STAPELIA OLIVACEA.
,, 6213.—CYPELLA PERUVIANA.
,, 6214.—PESCATORIA DAYANA, VAR. RHODACRA.
,, 6215.—VIBURNUM DILATATUM.
,, 6216.—SENECIO (KLEINIA) CHORDIFOLIA.

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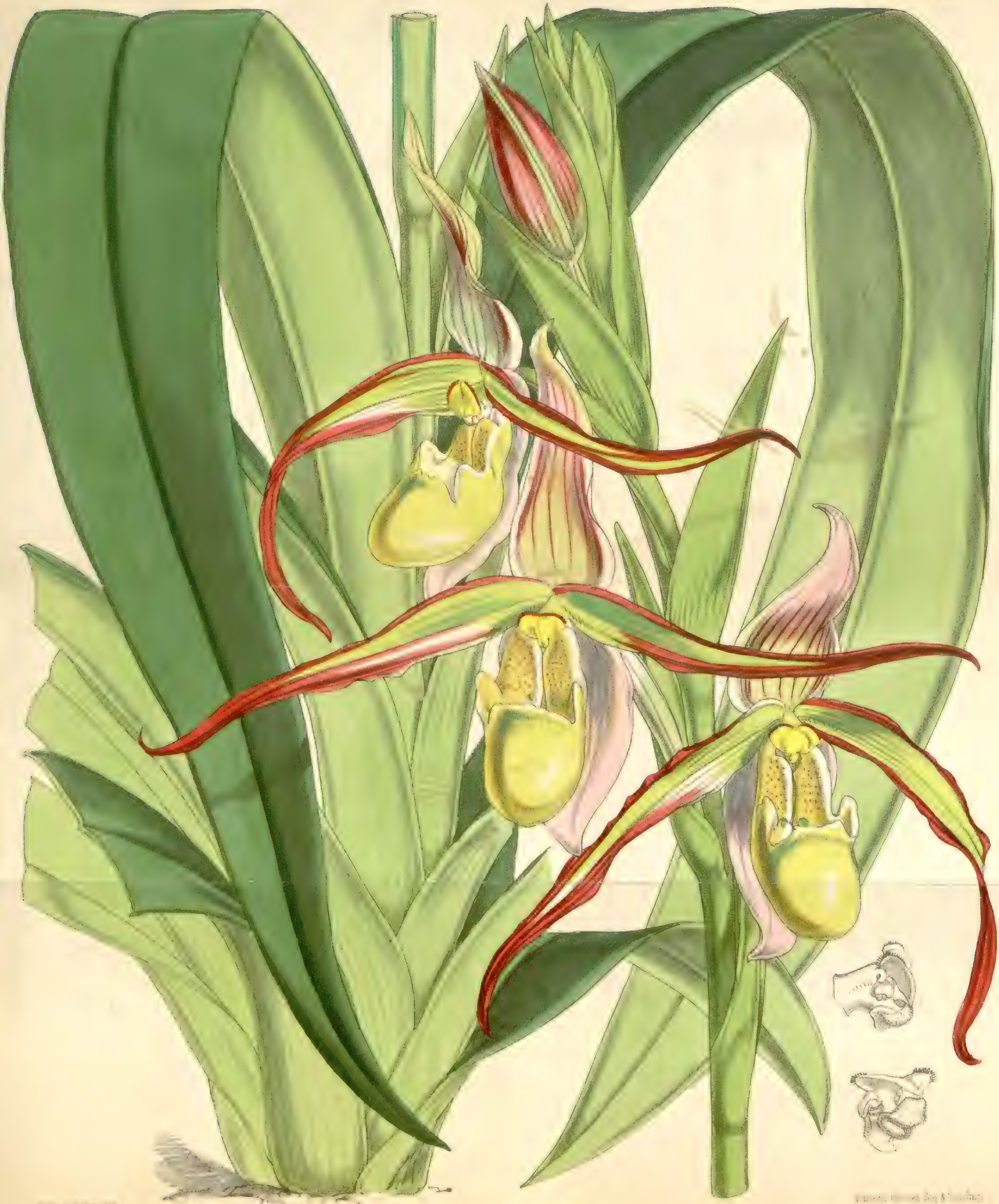

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TAB. 6217.

CYPRIPEDIUM ROEZLI.

Native of New Grenada.

Nat. Ord. ORCHIDEÆ.—Tribe CYPRIPEDIEÆ.

Genus CYPRIPEDIUM, *Linn.* (*Endl. Gen. Plant.*, p. 220).

CYPRIPEDIUM (Selenipedium) *Roezli*; foliis distichis elongato-ligulatis 2-pedalibus 2 poll. latis attenuato-acuminatis carinatis, scapo viridi multifloro vaginato, vaginis appressis, bracteis erecto-patentibus lanceolatis acuminatis ovarium superantibus, sepalo dorsali ovato-lanceolato acuto rubro-purpurascente, lateralibus in laminam ovato-oblongam obtusam labello æquilongo suppositam connatis carneis, petalis sepalis duplo longioribus horizontaliter patentibus anguste linearibus pallidis rubro-marginatis, labello oblongo flavo-viridi, ore amplo margine auriculato, staminodio triangulari-cordato margine purpureo-villoso, ovario 3-loculari.

Selenipedium Roezli, *Rchb. f. in Regel Gartenfl.*, 1871, 163, t. 714, et 1873, 97, t. 754.

Cypripedium Roezli, *Ill. Hort. N. S.*, t. 138.

The nearest ally of this magnificent species is undoubtedly *C. longifolium* (Tab. nost. 5970), which differs in its much smaller stature, narrower leaves, spreading sheaths of the purple scape, shorter, more obtuse dorsal sepals, and colour of the flower. In all essential characters they agree very closely indeed, and the almost identical structure and form of the lip and sexual apparatus suggest the possibility of their being races between which intermediates will be found. For horticultural purposes *C. Roezli* is incomparably the finest of the two, not only in colour, but on account of its size, it being by far the largest of the genus hitherto discovered. Probably these species would hybridise with facility, but I see nothing to be gained by such a proceeding, *C. longifolium* presenting no one superiority but the bright red colour of its scape.

Cypripedium Roezli is a native of New Grenada, where it was found by Roezl on the banks of the Dagua river, which, according to Regel, occupies a valley between two ranges of the Andes. I find, however, no such river on the map, but a small town of Dagua on the western declivity of the Andes,

MARCH 1ST, 1876.

near the Bay of Choco. The specimen here figured flowered at Messrs. Veitch's establishment in January, 1874. It is said to flower perennially and profusely, a statement inconsistent with the habits of any plants in continuous health, but which, if taken with the caution to be used in accepting the laudatory advertisements of choice plants, may be regarded as evidence of its being a very free flowerer.

Descr. Quite glabrous. *Leaves* two feet long and upwards, nearly two inches broad, strap-shaped, narrowed into a point, keeled, deep green above, pale beneath. *Scape* sometimes three feet high, strict, green, many-flowered, sheaths appressed. *Bracts* three inches long, green, strict, erecto-patent, lanceolate, acuminate, compressed, rather exceeding the ovary. *Flowers* very large, five inches long from the tip of the dorsal sepal to that of the combined lateral ones, and seven inches broad across the petals. *Dorsal sepal* ovate-lanceolate, acuminate, waved, yellowish-green, with a suffused rose-purple border; two lateral sepals combined into an ovate-oblong, obtuse, flesh-coloured, concave limb. *Petals* narrowly linear-lanceolate, horizontal, with bright red-purple border and tip. *Lip* three inches long; saccate portion green, half the length of the whole, with auricled sides and truncate mouth; edges of lip above the sac inflexed, with flat, dirty yellow surfaces speckled with pale red. *Staminodes* triangular-cordate, with red-purple villous margins.—*J. D. H.*

Fig. 1, Lateral, and 2, side view of staminode:—*magnified*.

6118

[illegible]

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TAB. 6218.

ANTHURIUM SAUNDERSII.

Native of Brazil?

Nat. Ord. AROIDEÆ.—Tribe ORONTIEÆ.

Genus ANTHURIUM, *Schott* (*Prodr. Syst. Aroid.*, p. 436).

ANTHURIUM (Dactylophyllium) *Saundersii;* scandens, caule crassitiæ pennæ olorinæ, foliis digitatis, petiolo 6-pollicari gracili, geniculo ¼-pollicari, foliolis 7-9 subsessilibus 8-pollicaribus anguste lineari-lanceolatis ½ poll. latis caudato-acuminatis integerrimis incurvis, pendunculo pollicari, spatha 2-pollicari ovato-lanceolata alba spadice æquilongo, stigmate sessili obtuse quadrato.

The number of species of *Anthurium* appears to be very great, no less than 180 being enumerated in Schott's Prodromus. The humid forests of America, from Mexico to South Brazil, on both coasts, abound in species of varied form and stature, from herbs a few inches high to gigantic climbers that by their weight bring forest trees to the ground. For hot-house culture, where perennial green foliage is required, no genus of plants is more commendable, because of the bright glossy foliage that attracts no insects and harbours few, the little care they require in culture, and the bad treatment they will endure and yet live. The Kew collection of them, which contains upwards of seventy species, besides varieties, has long been celebrated, though it never equalled that at the Imperial Gardens, Schoenbrunn, near Vienna, when under the directorship of the late Professor Schott, who made the collection and study of Aroids the labour of a lifetime.

Anthurium Saundersii was received from the rich collection of W. W. Saunders, Esq., but with no information as to its native country, under the name of *A. coriaceum*, Lind.; but it widely differs from Endlicher's plant of that name, and approaches more nearly to *A. Ottonianum*, Kunth., also a native of Brazil, and to one called *A. jatrophæfolium*, in the Kew collection, a name I have not found in any publication.

DESCR. *Stem* as thick as a swan's quill, climbing, about

MARCH 1ST, 1876.

two feet in our plant, terete, rooting at the nodes. *Leaves* digitate; petiole about six inches long, slender, terete, with an oblong thickened joint at the top; leaflets about eight, eight to ten inches long, very narrow, linear-lanceolate, about half an inch broad, narrowed at the tip into long, slender, incurved points, and at the base into very short, channelled stalks, dark green above, the intra-marginal nerve connected with the midrib by regular, spreading, delicate venules, paler beneath. *Peduncle* about an inch long, stout, erect. *Spathe* two inches long, ovate-lanceolate, greenish-white. *Spadix* as long as the spathe, stout, sessile, purplish when the flowers are fully expanded. *Filaments* very broadly oblong; anthers broad, with rather large pores. *Ovary* broadly ovoid; stigma sessile, square, with obtuse angles.—*J. D. H.*

Fig. 1, Flowers seen from above; 2, side view of a flower; 3, ovary:—*all magnified.*

1
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TAB. 6219.

EPISCIA ERYTHROPUS.

Native of New Grenada.

Nat. Ord. GESNERACEÆ.—Tribe CYRTANDREÆ.

Genus EPISCIA, *Mart.* (*Benth. et Hook. f., Gen. Plant.*, vol. ii., p. 1006 *ined.*).

EPISCIA (Centrosolenia) *erythropus*; glabriuscula, caule brevi, foliis 6-8-pollicaribus oblanceolatis caudato-acuminatis basi decurrente angustatis inæqualiter denticulatis petiolo costaque sanguineis sparse setulosis supra læte viridibus subtus rubro-suffusis, pedunculis numerosis axillaribus 1-2-pollicaribus gracilibus 1-floris, calycis segmentis subulato-lanceolatis, corollæ pallide carneæ tubo pollicari angusto basi saccato intus aurantiaco maculato fauce vix inflata, limbi plani obliqui lobis æqualibus rotundatis, ovario pubescente.

Though evidently belonging to the *Centrosolenia* section of the genus *Episcia*, I have failed to identify this with any described species, or to match it with any specimen in the Kew Herbarium. The genus has a wide range, from Mexico to South Brazil, and most of its members are referable to the same section as this, which is distinguished by the absence of surculi, fascicled flowers, narrow calyx-lobes, and saccate base of the corolla-tube—a character evident in those members of the same section that are figured in this work, namely, *E. chontalensis*, Tab. 5925, and *Centrosolenia glabra* and *picta*, Tabs. 4552 and 4611.

The genus *Episcia* has been remodelled by Mr. Bentham for the forthcoming part of the "Genera Plantarum," and divided into six sections, all figured in this magazine, and answering to the following genera of authors; namely, his own genus *Centrosolenia*, which includes *Trichodrymonia* of Oersted; *Nautilo-calyx* of Linden (Tab. 4675); and five genera of Hanstein, viz., *Physodeira* (Tab. 4390), *Cyrtodeira* (Tabs. 4312, 6136, 5195), *Alsobia* (Tab. 4089), and *Skiophila* (Tabs. 4720, 4866). As thus reconstructed, *Episcia* very nearly accords as to limits with those assigned by Martius to it on its establishment. *Episcia erythropus* was introduced from New Grenada by Messrs. Veitch, who sent the plant for figuring in March, 1874.

DESCR. Nearly glabrous, except a few scattered hairs on the petiole, midrib, and principal nerves beneath the leaf. *Stem* very short, stout. *Leaves* subradical, a foot long, oblanceolate, caudate-acuminate, decurrent on the stout petiole, irregularly toothed, bright green above, pale and suffused with red beneath, midrib and short petiole very stout, blood-red, nerves many, arching, also red. *Flowers* fascicled in the axils of the leaves, on slender single-flowered peduncles about one to two inches long. *Calyx* divisions subulate-lanceolate, quite entire, green. *Corolla* pale flesh-coloured, with orange-purple spots within the yellow throat and tube; tube over one inch long, rather slender, with a saccate gibbosity at the base; limb three-quarters of an inch in diameter, oblique, nearly flat; lobes orbicular. *Anthers* short. *Ovary* pubescent.—*J. D. H.*

Fig. 1, Corolla laid open; 2, pistil and disk:—*both magnified.*

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TAB. 6220.

TALINUM ARNOTII.

Native of South Africa.

Nat. Ord. PORTULACEÆ.

Genus TALINUM, *Adans.* (*Benth. et Hook. f.*, *Gen. Plant.*, vol. i., p. 157).

TALINUM *Arnotii;* caudice robusto ligneo, ramis annotinis pedalibus, foliis brevissime petiolatis late oblongo-orbiculatis apiculatis basi et apice rotundatis, floribus axillaribus, pedunculis foliis 2-3-plo longioribus, floribus fere 1 poll diametro.

This is one of a collection of plants of a very remarkable habit, which was sent to Kew in 1867 by the Hon. David Arnot, then Commissioner for the Griqua States, and residing at Eskdale, Albania. For the most part they presented more or less cylindrical or spindle-shaped woody stocks, of almost stony hardness, which serve as reservoirs of moisture and nourishing matter during the scorching droughts of the dry, stony district they inhabit. Of these some remained for several years in the stove before they showed any signs of life, and when they did so they proved to belong to very different natural Orders. Some were *Asclepiadeæ* of the genus *Ceropegia* and its allies, others *Cucurbitaceæ*, others *Convolvulaceæ*, and still others *Geraniaceæ*, *Leguminosæ*, and *Portulaceæ*, to which latter belongs the subject of the present plate, which, though imported as above stated in 1867, did not flower till six years afterwards.

The genus *Talinum* is represented in South Africa by a widely diffused species, the old *T. caffrum* (to which the present is perhaps, too, nearly allied), which differs in the narrow leaves contracted at both ends, and, judging from dried specimens, the much smaller flowers. The only other Old World species is *T. cuneifolium*, Willd, a native of Tropical Africa and Arabia, which extends eastwards into Western India. It has leaves more like those of *T. Arnotii* than are those of *T. caffrum*, but they are cuneate at the base, and the flowers are racemose.

DESCR. *Trunk* or *root-stock* five to eight inches long, cylindric, woody, one to two inches in diameter, covered with light brown bark. *Branches* a foot long, erect, soft, succulent, cylindric, slender, sparingly divided, green. *Leaves* attenuate, almost sessile, one and a half inches long and nearly as broad, broadly orbicular-oblong, rounded at both ends, apiculate at the tip, smaller upwards, green, fleshy, margins quite entire, slightly recurved. *Peduncles* axillary, one-flowered, longer than the leaves, spreading, with a small bract, and sometimes a rudimentary flower-bud above the middle. *Flowers* one inch in diameter. *Sepals* ovate, acute, green. *Petals* obovate, acute, pale golden yellow. *Stamens* half the length of the sepals. *Ovary* almost globose; style short; stigmas slender, recurved.—*J. D. H.*

Fig. 1, Peduncle and flower; 2, ovary; 3, transverse section of ditto:—*magnified.*

6221

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TAB. 6221.

BOUCHEA PSEUDOGERVAÔ.

Native of Brazil.

Nat. Ord. VERBENACEÆ.—Tribe VERBENEÆ.

Genus BOUCHEA, *Cham.* (*Benth. et Hook. f.*, *Gen. Plant.*, vol. ii., p. 1144 *ined.*).

BOUCHEA *pseudogervaô;* herbacea, annua, glabra, ramis obtuse 4-gonis, foliis petiolatis ovatis v. elliptico- v. ovato- acuminatis grosse argute serratis serraturis apiculatis, spicis demum elongatis strictis, floribus brevissime pedicellatis, bracteis parvis subulatis, calycibus elongatis rachi appressis dentibus subulatis, corollæ tubo gracili curvo, lobis 2 superioribus minoribus inferiore ceteris majore omnibus late ovato-oblongis apice rotundatis, capsula calycem subæquante.

B. pseudogervaô, *Cham. in Linnæa*, vol. vii., p. 254; *Schauer in DC. Prod.*, vol. xi., p. 557; *et in Mart. Fl. Bras. Verbenac.*, p. 195.

Verbena pseudogervaô, *St. Hil. Plant. Us. Bras.*, t. 40.

V. fluminnensis, *Velloz. Fl. Flum.*, vol. i., t. 38.

An annual herb, often becoming almost shrubby at the base, widely distributed throughout the warmer parts of the South American continent, from Peru to the province of St. Paul, in South Brazil, inhabiting woods, waste places, and rubbish heaps.

The genus *Bouchea* is closely allied to *Verbena* and *Stachytarpha* (see Tabs. 4211 and 5538, *Stachytarphæta*), differing from the former in the two- (not four-) celled fruit, and from the latter in having four (not two) anthers, and in the position of the anther-cells, which are collateral (not pressed end to end). About sixteen species are known, natives of the Tropics of the Old and New Worlds and of South Africa.

The name *pseudogervaô*, literally "False Vervain," is derived from the likeness of this species to the Gervaô, or common Verbena of South America. St. Hilaire remarks that the bruised leaves have a bad smell, notwithstanding which "quelques personnes, frappées de sa ressemblance avec le véritable Gervaô, ont essayé de s'en servir également pour remplacer le thé; mais la boisson qu'elle fournit n'a rien qui flatte le goût."

The plant here figured was raised from seeds imported from Peru, and flowered by Messrs. Veitch in September, 1874. The species varies greatly in the size of the corolla, some of those in the Herbarium having the limb not half an inch in diameter.

Descr. An annual, nearly glabrous herb. *Stems* obtusely 4-gonous, two to five feet high, green. *Leaves* opposite, petioled, ovate or elliptic-ovate, acuminate, narrowed into the petiole, coarsely, sharply serrate, the serratures mucronate, dark green and rugose above, paler beneath. *Spike* terminal, six to ten inches long, slender, strict, glabrous or puberulous; bracts ovate-subulate, green, appressed, much shorter than the calyx; pedicels very short and stout. *Calyx* appressed to the rachis, two-thirds of an inch long, slender, slightly curved, tubular, with five small subulate teeth. *Corolla-tube* very slender, curved, twice as long as the calyx; limb an inch and a half in diameter, pale red-purple; lobes spreading, broadly orbicular-oblong, tips rounded, two upper smallest, lower largest. *Filaments* short, anthers ovate. *Ovary* narrow, ovoid. *Capsule* shorter than or slightly exceeding the calyx. —*J. D. H.*

Fig. 1, Calyx, style, and stigma; 2, portion of corolla-tube and stamen; 3, ovary:—*all magnified.*

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BOTANICAL MAGAZINE.

CONTENTS OF No. 375, MARCH. 1876.

Tab. 6217.—CYPRIPEDIUM ROEZLI.
,, 6218.—ANTHURIUM SAUNDERSII.
,, 6219.—EPISCIA ERYTHROPUS.
,, 6220.—TALINUM ARNOTII.
,, 6221.—BOUCHEA PSEUDOGERVAÔ.

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6222

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TAB. 6222.

SACCOLABIUM HENDERSONIANUM.

Native of Borneo.

Nat. Ord. ORCHIDEÆ.—Tribe VANDEÆ.

Genus SACCOLABIUM, *Blume* (*Lindl. Gen. et Sp. Orchid.*, p. 220).

SACCOLABIUM *Hendersonianum*; caule brevissimo, foliis crassis distichis ligulatis subacutis carinatis apice integerrimis, racemo breviter pedunculato cylindraceo multifloro, rachi glauca, bracteis parvis triangularibus, floribus ½ poll. diam. roseis, sepalo dorsali orbiculato concavo, lateralibus longioribus late obovato-oblongis apice rotundatis, petalis sepalo dorsali æquilongis obovatis, labello ad calcar cylindraceum compressum pallidum rectum obtusum reducto, ore 3-dentato v. 3-cuspidato, columna brevissima, caudicula recta subulata.

S. Hendersonianum, *Reichb. f. in Gard. Chron. N.S.* (1875), vol. iv., p. 356.

Dr. Reichenbach, in describing this bright-coloured species as a very curious and beautiful plant, further states that it is difficult to assign it a place amongst the known species, adding that it will be compared by beginners with *S. ampullaceum* (Tab. nost. 5595) and *S. miniatum* of Lindl. (to which might be added the *S. miniatum* of this work (Tab. 5326), which I have reason to believe is the true *S. curvifolium*). All these species have, however, a distinct lip of a linear form, an organ reduced in *S. Hendersonianum* to obscure teeth at the mouth of the spur, as in *S. roseum* and *compressum*. I am indebted to my friend Dr. Reichenbach for identifying the plant, and to Messrs. E. G. Henderson and Sons, of the Wellington Road Nurseries, for the opportunity of figuring it. It was imported from Borneo, and flowered in 1874; but Dr. Reichenbach informs me that it has been in Europe ever since the year 1862.

DESCR. *Stem* very short. *Leaves* four to six inches long, distichous, curved and spreading in various directions, very coriaceous, ligulate, subacute, but obscurely two-lobed at the tip through the recurved tip being deeply channelled, pale green. *Raceme* as long as the leaves, shortly peduncled,

APRIL 1ST, 1876.

stiff, cylindric, many-flowered; flowers crowded; peduncle and rachis pale green and glaucous; bracts small, triangular. *Perianth* two-thirds of an inch long from the tip of the upper sepal to that of the spur; bright rose-red, except the almost white spur. *Dorsal sepals* orbicular, concave; lateral ones larger, obovate-oblong, with broad, rounded tips, and a dark rose-purple spot at their bases. *Petals* obovate, with rounded tips, smaller than the lateral sepals. *Lip* reduced to three teeth at the mouth of the cylindric, compressed, obtuse, straight spur, which is slightly falcate and rather contracted below the mouth. *Column* very short, with a slender, subulate rostellum.—*J. D. H.*

Fig. 1, Flower; 2, spur and column:—*both magnified.*

6223.

W.H. Fitch del et Lith.

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TAB. 6223.

SEDUM PULCHELLUM.

Native of the United States.

Nat. Ord. CRASSULACEÆ.

Genus SEDUM, *Linn.* (*Benth. et Hook. f., Gen. Plant.*, vol. i., p. 659).

SEDUM *pulchellum*; glaberrimum, ramis assurgentibus simpliciusculis foliosis, foliis sessilibus erecto- v. recurvo- patentibus cylindraceis obtusis basi auriculatis auriculis obtusis v. in cornua divergentia productis, cymis umbellatis v. paniculatis 3-6-pollicaribus radiatis v. patento-recurvis simplicibus v. basi ramosis densifloris fructiferis erectis, floribus sessilibus secundis, bracteis linearibus, petalis linearibus obtusis v. subacutis sepalis ovato-lanceolatis obtusis duplo longioribus, glandulis parvis truncatis, ovariis cylindraceo-oblongis in stylos subulatos longiusculos attenuatis.

S. pulchellum, *Michx. Fl. Bor. Am.*, vol. i., p. 277; *Torr. et Gr. Fl. N. Am.*, vol. i., p. 559; *Walp. Rep.*, vol. ii., p. 263; *A. Gray, Man. Bot. N. U.S.*, p. 172; *Gard. Chron.*, 1874, ii., p. 552, cum ic. xylog.

S. pulchellum, DC. Prod., vol. iii., p. 403.

The Stone-crops form one of the most attractive and easily cultivated features of the garden rock-work, and a vast number of ornamental species have still to be introduced. Upwards of twenty were cultivated at Kew in 1810, and described in Aiton's "Hortus Kewensis"; the number now grown is about fifty, amongst which that here figured is one of the most attractive. It is a native of the mountains of the United States, from Virginia to Georgia, growing in rocky places.

The fine specimen here figured was sent by the Rev. Mr. Ellacombe from his rich and admirably-named collection at Bitton Vicarage, between Bristol and Bath, one of the most favoured climates and soils in Britain for a general collection of the herbaceous plants of temperate climates, and of which advantages its accomplished occupant makes the best use. It flowers both at Bitton and Kew in July, and must not be confounded (as pointed out by Dr. Masters in the "Gardener's Chronicle") with two plants commonly known in gardens as *S. pulchellum*, namely, *S. sexangulare* and *S. Lydium*.

DESCR. Quite glabrous. *Stems* four to eight inches high,

abruptly ascending from the base, flexuous, terete, simple above, leafy. *Leaves* half to one inch long, scattered, sessile, cylindric, obtuse, smooth, pale green, the base produced into two longer or shorter ears, which sometimes form obtuse, spreading spurs. *Cymes* umbellately spreading from the top of the stem, or more rarely paniculately arranged along its upper half, three to six inches long, recurved, slender, very many-flowered, erect in fruit. *Flowers* nearly half an inch in diameter, quite sessile, 8-merous, except the central one in the forks, which is 10-merous; bracts linear, green, nearly equalling the petals. *Sepals* ovate-lanceolate, obtuse. *Petals* twice as long, linear, subacute, rose-purple. *Stamens* shorter than the petals; anthers purple-brown. *Glands* small, square, emarginate. *Ovaries* rather shorter than the stamens, cylindric, oblong, narrowed into slender, subulate, suberect styles.—*J. D. H.*

Fig. 1, Leaf; 2, flowers; 3, glands and carpels; 4, fruit:—*all magnified.*

6234

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TAB. 6224.

HYPOESTES ARISTATA.

Native of South Africa.

Nat. Ord. ACANTHACEÆ.—Tribe JUSTICIEÆ.

Genus HYPOESTES, *Br.* (*Benth. et Hook. f.*, *Gen. Plant.*, vol. ii., p. 1122).

HYPOESTES *aristata*; pubescens v. villosa, caule erecto ramoso, ramulis 4-gonis, foliis petiolatis ovatis acutis integerrimis subtus præcipue pubescenti-pilosis, capitulis verticillatis inferioribus axillaribus superioribus subspicatis, bracteis foliaceis, involucris ovato-lanceolatis longe aristato-subulatis basi connatis 1-3-floris calyce multo longioribus hirtis, sepalis subulatis, corollæ tubo elongato gracili piloso fauce sensim ampliato, labio antico integro acuto, postico elliptico ad medium 3-lobato, staminibus labiis dimidio brevioribus, styli lobis linearibus recurvis.

H. aristata, *Soland. in Roem. et Sch. Syst.*, vol. i., p. 140; *Nees in DC. Prod.*, vol. xi., p. 509.

H. plumosa, *Eckl. et Meyer in Herb. Dregé.*

Justicia aristata, *Vahl*, *Symb.*, vol. ii., p. 2; *Enum.*, vol. i., p. 110.

The genus *Hypoestes* consists of some forty South African, Indian, and Australian plants, many of them weedy in habit and far from attractive in flower, to which, however, the subject of the present plate forms a conspicuous exception, being remarkable for its bright purple flowers, which are produced in profusion, and are prettily striped and spotted on the upper lip. It is a native of extra-tropical South Africa, from Algoa Bay to Natal, and is common in shrubberies. Nees, in De Candolle's "Prodromus," gives Delagoa Bay (Forbes) as a habitat; but this is a mistake for Algoa Bay, where, as well as in the first-named locality, Forbes collected plants for the Horticultural Society in the year 1822. It would no doubt form an attractive warm greenhouse plant if properly treated as to wintering, for, like all Cape plants, it must have a season of almost absolute rest. The specimen here figured flowered at Messrs. Veitch's establishment in February, 1874.

DESCR. An erect, branched herb, two to three feet high,

APRIL 1ST, 1876.

more or less softly pubescent or almost villous throughout. *Stems* green, obtusely quadrangular, rather tumid at the nodes. *Leaves* two to three inches long, petioled, ovate, acute, quite entire, acute rarely cordate or rounded at the base, membranous, dark green, faintly pubescent above, and still more so beneath. *Flowers* in axillary clusters, which, being more crowded upwards, are there disposed in terminal stout spikes, enclosed singly or in pairs or threes in an involucre of two lanceolate, concave bracts, which terminate in long awns. *Calyx* of five subulate segments, much smaller than the bracts. *Corolla* one inch long, rose-purple; tube slender, pubescent, expanding into a narrowly campanulate throat; lips shorter than the tube; upper elliptic, cleft to the middle into three acute lobes, the lateral lobes striped and the middle one spotted with purple; lower lip much smaller, linear-lanceolate, acute, revolute, striped with white. *Stamens* shortly exserted; anthers small, one-celled. *Style* with spreading, linear lobes.—*J. D. H.*

Fig. 1, Flower; 2, anther; 3, ovary, calyx, and involucre; 4 and 5, ovary and disk; 6, vertical section of ditto:—*all magnified.*

6225.

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TAB. 6225.

AINSLIÆA WALKERI.

Native of Hong-Kong.

Nat. Ord. COMPOSITÆ.—Tribe MUTISIACEÆ.

Genus AINSLIÆA, *DC.* (*Benth. et Hook. f.*, *Gen. Plant.*, vol. ii., p. 493).

AINSLIÆA *Walkeri;* glaberrima inflorescentia puberula, caule simplici erecto basi folioso, foliis erecto-recurvis lineari-ligulatis aristato-acuminatis a medio basin versus sensim angustatis apices versus pauci-spinuloso dentatis, panicula erecta elongata contracta, rachi rigida, ramis filiformibus infimis foliaceo-bracteatis apices versus floriferis, capitulis laxis patentibus et cernuis brevissime pedicellatis 2-3-floris, involucri bracteis ovato-lanceolatis acuminatis, corolla alba lobis 5 linearibus obtusis, antheris roseo-purpureis, achænio parvo superne setoso, pappi setis scabridis rigidis fuscis.

A most graceful little plant, belonging to a very little known genus that inhabits the mountains of North-eastern India, China, and Japan, and of which only one species had been found in Hong-Kong until the discovery of the species here figured, by Capt. A. L. Walker when Brigade-Major in the island. Both species are instances of the wonderful localisation of the plants of that little island, which has been so well discussed by Bentham in his Flora of Hong-Kong. *A. fragrans*, the kind already described, and which has broad, radical leaves, has been found on Victoria Peak, where it is so rare as to have been gathered by only one collector. The exact locality of *A. Walkeri* is not known, but as it has escaped the notice of such keen collectors as Champion, Hinds, Hance, Wright, Seeman, Wilford, and others, it cannot but be very rare and local. Though only containing twenty-nine square miles, the diminutive island of Hong-Kong contains upwards of 1000 native species of Flowering Plants and Ferns, which is only one-third less than the British Islands possess. Many of the most striking of these are more rare even than the Ainsliæas. Thus, speaking of the trees, Bentham states of one that only three trees of it are known in the island; of another that it was seen but once; and of a third that its existence is only known from a specimen picked out of a faggot of wood which a Chinaman was carrying home! Such facts as these, coupled with Capt. Walker's discovery of this *Ainsliæa*, render it more than probable that not a few novelties still lurk in this little British possession.

Ainsliæa Walkeri was communicated by Mrs. Walker, of Chase Cottage, Enfield, with whom it flowered for the first time in December last, the plant being then three years old.

Descr. A rigid, erect herb, a foot high, glabrous below, slightly pubescent in the inflorescence. *Stem* cylindric, green, leafy below, above terminating in a strict rachis bearing many very slender, erecto-patent, floriferous branches. *Leaves* erect and recurved, three to four inches long, narrow ligulate, but narrowed from beyond the middle to the base, keeled, dark green, terminated by a short bristle and several very acute, subterminal teeth. *Branches of panicle* one to two inches long, the lower with foliaceous, the upper with minute subulate bracts. *Heads* very shortly pedicelled, few together towards the tips of the branches, horizontal or drooping. *Involucre* narrow, its scales ovate-lanceolate, acuminate, green. *Flowers* about three. *Corolla* white, with five linear, spreading lobes. *Anthers* pale red-purple. *Achene* short, with stiff, scabrid, discoloured pappus.—*J. D. H.*

Fig. 1, Head; 2, flower from the same:—*both magnified.*

6226

TAB. 6226.

DENDROBIUM FUSCATUM.

Native of the Eastern Himalaya.

Nat. Ord. ORCHIDEÆ.—Tribe DENDROBIEÆ.

Genus DENDROBIUM, *Swartz* (*Lindl. Gen. et Sp. Orchid*, p. 74).

DENDROBIUM *fuscatum*; caulibus fasciculatis elongatis robustis undique foliatis subcylindraceis sulcatis, nodis non incrassatis, foliis distichis lanceolatis v. ovato-lanceolatis longe acuminatis striato-nervosis, racemis elongatis pendulis multifloris, rachi angulatim flexuoso, bracteis parvis lineari-oblongis obtusis appressis viridibus, pedicellis gracilibus, floribus 2 poll. diametr., sepalis petalisque consimilibus late oblongis obtusis incurvo-patentibus aurantiacis marginibus nudis, labello sepalis breviore late oblato cucullato villoso et fimbriato aureo plagis duobus purpureis basin versus, marginibus recurvis, mento brevi obtuso, columna brevissima.

D. fuscatum, *Lindl. in Journ. Linn. Soc.*, Aug. 1858, p. 8.

Lindley places this fine plant in his section *Holochrysa*, correctly noticing its affinity with *D. chrysanthum* (Bot. Mag., t. 1299), from which, however, it differs totally in inflorescence and in wanting the crenated wings on the back of the sepals and petals. In my apprehension it is still nearer to *D. fimbriatum*, Hook. (Tab. nost 4160), a native of the same countries, but which has larger flowers and narrower leaves, and a much more rigid rachis of the raceme. The double spot on the labellum of *D. fuscatum* might be supposed to indicate a specific difference between this and *D. fimbriatum*; but whereas the type of the latter species has a whole-coloured lip, the var. *oculatum* (Bot. Mag. supra) has a large blotch, which, if divided into two, would represent the markings of *D. fuscatum.*

D. fuscatum was first known from specimens collected by myself in the hot valleys of the Sikkim Himalaya and the Khasia Mountains in 1848-1850, where it is far from uncommon. A fine drawing of it (by a native artist) exists in the Cathcart collection of Himalayan plants at Kew, and represents many racemes from one stem, one of which has fifteen flowers, all of a much deeper orange, almost orange-brown, colour than in our figure. The specimen here figured flowered in the garden of F. Currey, Esq., F.R.S., Sec. L.S., in April, 1864, and was imported, I believe, from the Khasia Mountains.

Descr. *Stems* tufted, two to three feet long, nearly cylindric, grooved, leafy throughout, the nodes one to two inches long, not swollen, green. *Leaves* four to six inches long, sessile, lanceolate or ovate-lanceolate, very acuminate, striate, sheath short. *Racemes* numerous from the leafless nodes, four to seven inches long, drooping, shortly pedicelled, 6-15-flowered; rachis very slender, zig-zag; pedicels one inch long; bracts linear-oblong, obtuse, appressed, green. *Ovary* small. *Perianth* two inches in diameter, dark orange-yellow, with two purple spots at the base of the lip. *Sepals and petals* nearly equal and similar, broadly oblong, obtuse, spreading, somewhat concave and incurved, margins quite entire; lateral sepals produced behind into a short, obtuse spur. *Lip* shorter than the sepals, oblate-orbicular, with a recurved entire limb that is villous on the surface and fimbriate on the margin. *Column* very short.—*J. D. H.*

6227

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TAB. 6227.

ALLIUM ANCEPS.

Native of California.

Nat. Ord. LILIACEÆ.—Tribe ALLIEÆ.

Genus ALLIUM, *Linn.* (*Regel, Mon. Alliorum*, 1875).

ALLIUM *anceps;* bulbo solitario ovoideo tunicis membranaceis, scapo brevi lato acuto ancipite, foliis loratis glabris viridibus carnoso-herbaceis caule longioribus, spathæ valvis 2-3 membranaceis brevibus deltoideis, umbellis densis 30-100-floris, pedicellis flore longioribus, perianthii saturate purpurei segmentis linearibus acutis flore expanso supra basin patulis, staminibus leviter exsertis, capsulis globosis vix cristatis.

A. anceps, *Kellogg in Proc. Calif. Acad.*, vol. ii., p. 109, t. 32; *S. Wats. Bot.*, 40*th Parall.*, p. 352 et 488, tab. 36, fig. 4-6; *Regel, Mon. All.*, p. 251.

This is a very curious species of *Allium*, remarkable for its dwarf habit, broad, flat, acutely-angular stems, and very dense umbels of bright purple flowers with acute segments. It inhabits the Sierra Nevada portion of the Rocky Mountains, both upon the Californian and Nevadan sides, at an elevation above sea-level of from four to five thousand feet; and of course, like all the other known species of the genus—now, according to Dr. Regel's estimate, above 250 in number—is quite hardy in England in the open air. The plate was drawn from specimens sent by Messrs. Veitch, with whom it flowered in May, 1875. Our single dried specimen at Kew was gathered at Cisco by Dr. Bolander. There are two other species of similar habit in the same region, viz., *A. falcifolium*, Hook. & Arn., and *A. Tolmiei*, Baker MSS., the latter described as a variety of *A. Douglasii* in Hooker's "Flora Boreali-Americana," vol. ii., p. 185.

DESCR. *Bulb* solitary, ovoid, with membranous tunics. *Scape* two to four inches high, flat, acutely edged, one-sixth to one-quarter of an inch broad. *Leaves* two, leaving the scape at the base, lorate, thick, fleshy, falcate, glabrous, six to nine inches long, one-half to three-quarters of an inch broad. *Valves of the spathe* two or three, membranous, deltoid, shorter than the umbel, tinged with red. *Flowers* thirty to one hundred, in a dense umbel; pedicels one-quarter to half an inch long. *Perianth* bright purple, one-third of an inch deep, the linear acute divisions spreading horizontally above a permanent basal cup. *Stamens* finally just exserted; filaments uniform, subulate; anthers oblong. *Capsule* globose, scarcely at all crested on the back of the valves; seeds usually two in a cell.—*J. G. Baker.*

Fig. 1, A single flower; 2, pistil:—*both magnified.*

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CONTENTS OF No. 376, APRIL, 1876.

TAB. 6222.—SACCOLABIUM HENDERSONIANUM.
" 6223.—SEDUM PULCHELLUM.
" 6224.—HYPOESTES ARISTATA.
" 6225.—AINSLIÆA WALKERI.
" 6226.—DENDROBIUM FUSCATUM.
" 6227.—ALLIUM ANCEPS.

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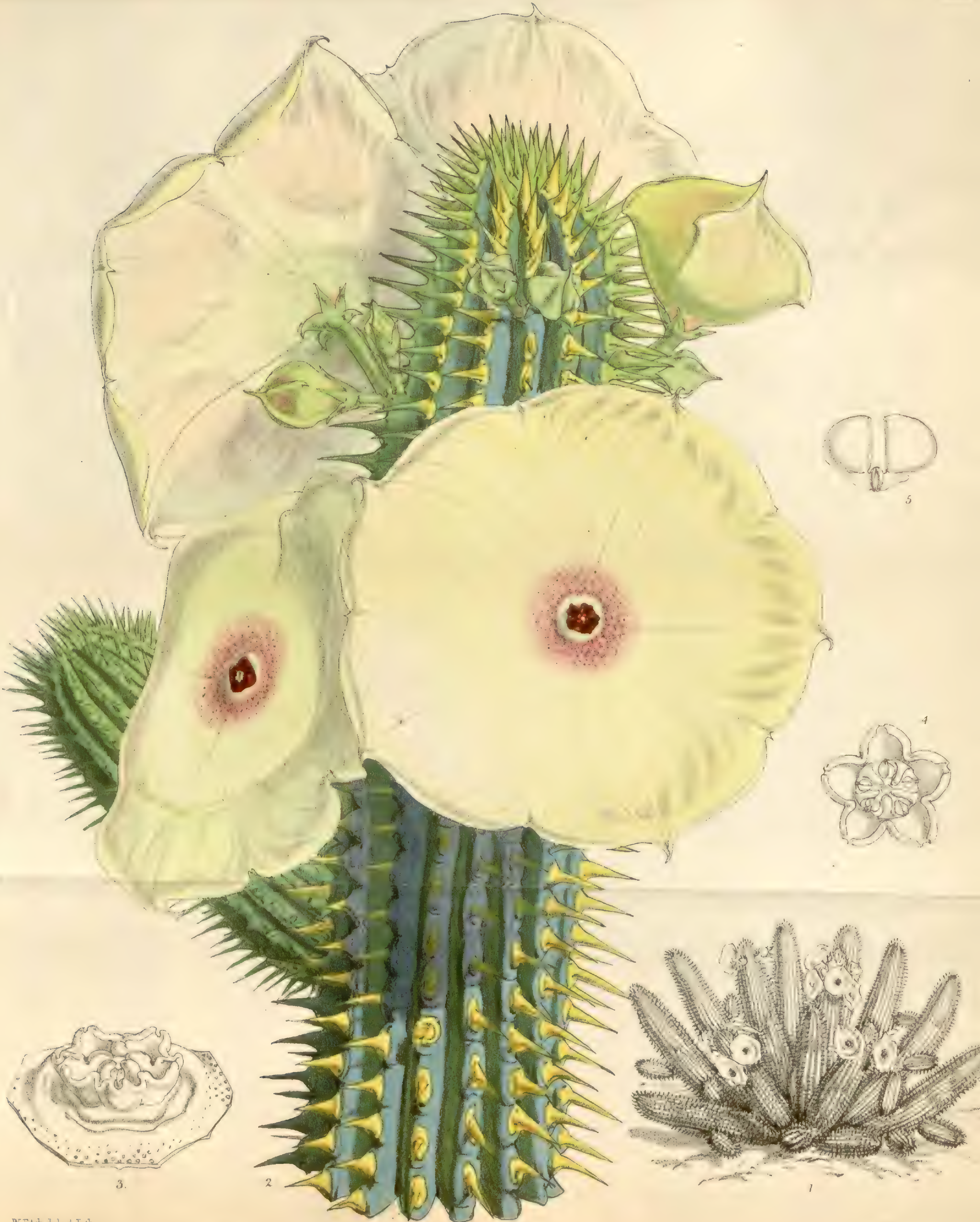

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TAB. 6228.

HOODIA GORDONI.

Native of Little Namaqualand.

Nat. Ord. ASCLEPIADACEÆ.—Tribe STAPELIEÆ.

GEN. CHAR.—*Calyx* brevis, 5-partitus, foliolis acuminatis basi glandulis minutis interpositis. *Corolla* tubo parvo, limbo maximo dilatato concavo sæpius demum explanato membranaceo nervoso obsolete 5-lobo, lobis abrupte apiculatis. *Corona* duplex, cyathiformis vel rotata; exterior tubo stamineo septis affixa, 5-partita, segmentis latis cavis bifidis vel plus minusve 2-lobis; interior squamis 5 septis antherisque basi adnatis oblongis incumbentibus. *Antheræ* breves, oblongæ, inappendiculatæ, stigmati incumbentes et semi-immersæ. *Pollinia* erecta, semi-orbicularia, funiculo appendice membranacea lanceolata munito. *Stigma* vertice subplanum. *Folliculi* utrinque acuminati, læves.—Herbæ *cactiformes* Africæ australis *et tropicæ incolæ.*

HOODIA *Gordoni;* corolla diametro 4-pollicari demum explanata intus glabra, coronæ exterioris segmentis oblongis obscure bilobis.

H. Gordoni, *Sweet Hort. Brit.*, 2nd ed., p. 359.

STAPELIA Gordoni, *Mass. Stap. Nov.*, p. 24, pl. 40; *Don Gen. Syst.*, vol. iv., p. 116.

MONOTHYLACEUM Gordoni, *Don. l.c.*

SCYTANTHUS Gordoni, *Hook. Ic.*, pl. 625.

This very remarkable plant was discovered near the Orange River by Colonel Gordon. He made a drawing on the spot, which Masson published in his "Stapeliæ Novæ" (1796). For nearly half a century nothing more was known of it than this figure, which seemed so extraordinary "that our Stapelia-growers used to speak of it as a fiction." The plant, however, was rediscovered in quantity by Mr. Burke, a gardener of the Earl of Derby, who was sent out at that nobleman's expense to accompany Mr. Zeyher on an expedition for collecting plants and animals. Living plants were cultivated at Knowsley, Lancashire, Lord Derby's seat, but I am not aware that they ever flowered, the plate published in the "Icones Plantarum" being based upon Mr. Burke's dried specimens, presented with his other botanical collections to Sir. W. Hooker, and now in the Herbarium of the Royal Gardens.

In 1874 H.E. Sir H. Barkly, the Governor of the Cape, obtained from Henkries, near the Orange River, two fine specimens of this plant. One unfortunately died, but the other reached Kew in perfect condition, having been carefully suspended in a wooden box without earth. Sir Henry Barkly remarks that plants of *Hoodia* as well as *Piaranthus* usually have a single tap-root with branchlets spreading out laterally at some depth, and that they often die when transplanted. The Kew plant appeared at first to be in excellent health, and after flowering in 1875 (for the first time, I believe, in Europe) made some growth, but at the beginning of the present year it rotted off at the crown without apparent cause.

DESCR. *Stems* numerous from the crown, erect or somewhat spreading, cylindric, slightly branched, leafless, younger portions with closely-set spirally-arranged tubercles, ultimately confluent into prominent longitudinal ridges; tubercles with a strong slightly-deflexed prickle swollen at the base. *Flowers* produced near the apex of the branches, 1-3-together, shortly petiolate. *Calyx* short, five-partite; segments acuminate, with minute glands interposed between each pair. *Corolla* with a very short tube; limb about four inches in diameter, at first slightly concave, ultimately nearly flat or even reflexed, obsoletely five-lobed; lobes abruptly apiculate, membranous, with pale radiating nerves, pale brownish flesh-coloured, glabrous. *Corona* double; exterior spreading, adnate to the staminal tube by five vertical septa, five-lobed, lobes oblong, concave, obscurely bilobed; interior of five narrowly oblong incumbent scales adnate to the septa and the base of the anthers. *Anthers* short, oblong, inappendiculate, incumbent on the stigma and half-immersed in it. *Stigma* flattened at the apex. *Pollen-masses* erect. *Follicles* in pairs, tapering to each end, smooth.—*W. T. T. D.*

Fig. 1, Reduced sketch of whole plant; 2, flowering-stem, *natural size*; 3, gynostemium from side; 4, gynostemium from above; 5, pollen-masses:—3-5 *are magnified analyses from flowers of* Hoodia Currori *preserved in spirit.*

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TAB. 6229.

ODONTOGLOSSUM PRÆNITENS.

Native of New Grenada.

Nat. Ord. ORCHIDEÆ.—Tribe VANDEÆ.

Genus ODONTOGLOSSUM, *H. B. et K.* (*Lindl. Fol. Orchid.*, *Odontoglossum*).

ODONTOGLOSSUM (Xanthoglossum) *prænitens;* pseudobulbis elongato-oblongis angustis compressis, foliis 6-8-pollicaribus lineari-oblanceolatis acutis subtus carinatis enerviis, scapo gracili 6-8-flore, bracteis parvis acutis, floribus 2 poll. diametr. aureis plagis latis fusco-purpureis, sepalis petalisque subsimilibus elliptico-lanceolatis acuminatis marginibus subundulatis, labelli ungue lineari-obcuneato albo basi utrinque 2-corniculato, lamina suborbiculata crispata denticulata callis basi 2 corniiformibus porrectis et lamella lata denticulata disco adnata aucta, columna auriculata ecirrosa.

O. prænitens, *Reichb. f. in Gard. Chron., N.S.*, vol. iii. (1875), p. 524.

Reichenbach describes this as an interesting addition to our knowledge of *Odontoglossa*, allied to *O. triumphans*, but with smaller flowers, and as suggesting the suspicion that it might prove to be a hybrid between that species and *O. tripudians* : it however differed in the shape of the lip so much that he was obliged to abandon this idea. On the other hand, this justly celebrated Orchidologist speaks doubtfully of the specific value of *O. prænitens* in saying that it "*may prove* as good a species as *O. nevadense.*"

O. prænitens is a native of New Grenada, whence it was collected by Mr. Gustave Wallis for Messrs. Veitch, who forwarded the specimen here figured in April, 1875.

DESCR. *Pseudo-bulbs* two inches long, narrowly oblong, slender, much flattened, with acute margins. *Leaves* six to eight inches long, recurved, narrow, linear-oblanceolate, acute, narrowed towards the base and there concave, nearly flat above, keeled at the back, dark green. *Scape* together with the raceme as long as the leaves, slender, inclined, six to eight-flowered, green ; bracts one quarter of an inch long, appressed to the pedicel, which with the ovary is from an inch to an inch and a half long. *Flowers* lax, two inches in diameter, of a bright golden yellow and shining surface, with

MAY 1ST, 1876.

irregular transverse blotches of brown-purple on all the segments. *Sepals and petals* nearly equal and similar, elliptic-lanceolate, acuminate, rather waved. *Column* clawed; claw linear-obcuneate, with a pair of horned calli on each side towards the base, its thickened disk terminating in two nearly horizontal horns that are as it were inserted at the base of the blade and project over it; blade orbicular-reniform, with a crumpled and toothed margin, and bearing on its disk a thickened plate with a toothed margin concentric with the margin of the lip itself. *Column* with short, broad auricles.—*J. D. H.*

Fig. 1, Side, and 2, front view of column and lip:—*both magnified.*

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TAB. 6230.

VITEX LINDENI.

Native of New Grenada?

Nat. Ord. VERBENACEÆ.—Tribe VITICEÆ.

Genus VITEX, *Linn.* (*Benth. et Hook. f. Gen. Plant.*, vol. ii., p. 1154).

VITEX *Lindeni;* frutex ramulis gracilibus junioribus et inflorescentia cano-puberulis, foliis 3-5-foliolatis, foliolis sessilibus ellipticis v. elliptico-obovatis abrupte acuminatis glaberrimis membranaceis, cymis axillaribus longe pedunculatis capitulæformibus paucifloris, floribus brevissime pedicellatis, bracteis minutis, calyce cylindraceo-campanulato, breviter æqualiter 5-dentato puberulo, corollæ pallide violaceæ tubo calyce ter longiore, limb plani labiis patentibus convexis superiore minore 2-lobo lobis ovatis obtusis, inferiore 3-lobo lobis orbiculatis, genitalibus breviter exsertis, connectivo globoso, stigmatis lobis subulatis.

Apparently a shrub or small shrubby tree, cultivated in the Palm House at Kew during the last three years, received from Mr. Linden in 1872, and a native presumably of New Grenada. It is closely allied to *V. capitata*, Vahl., of Trinidad, and *V. Schomburgkiana*, Schauer, of British Guiana; differing from the former in the much shorter, broader leaflets without the caudate apices, and from the latter in wanting the soft tomentum of the leaves and branchlets, and from both in the more cylindric calyx. It flowers annually at Kew about the month of May.

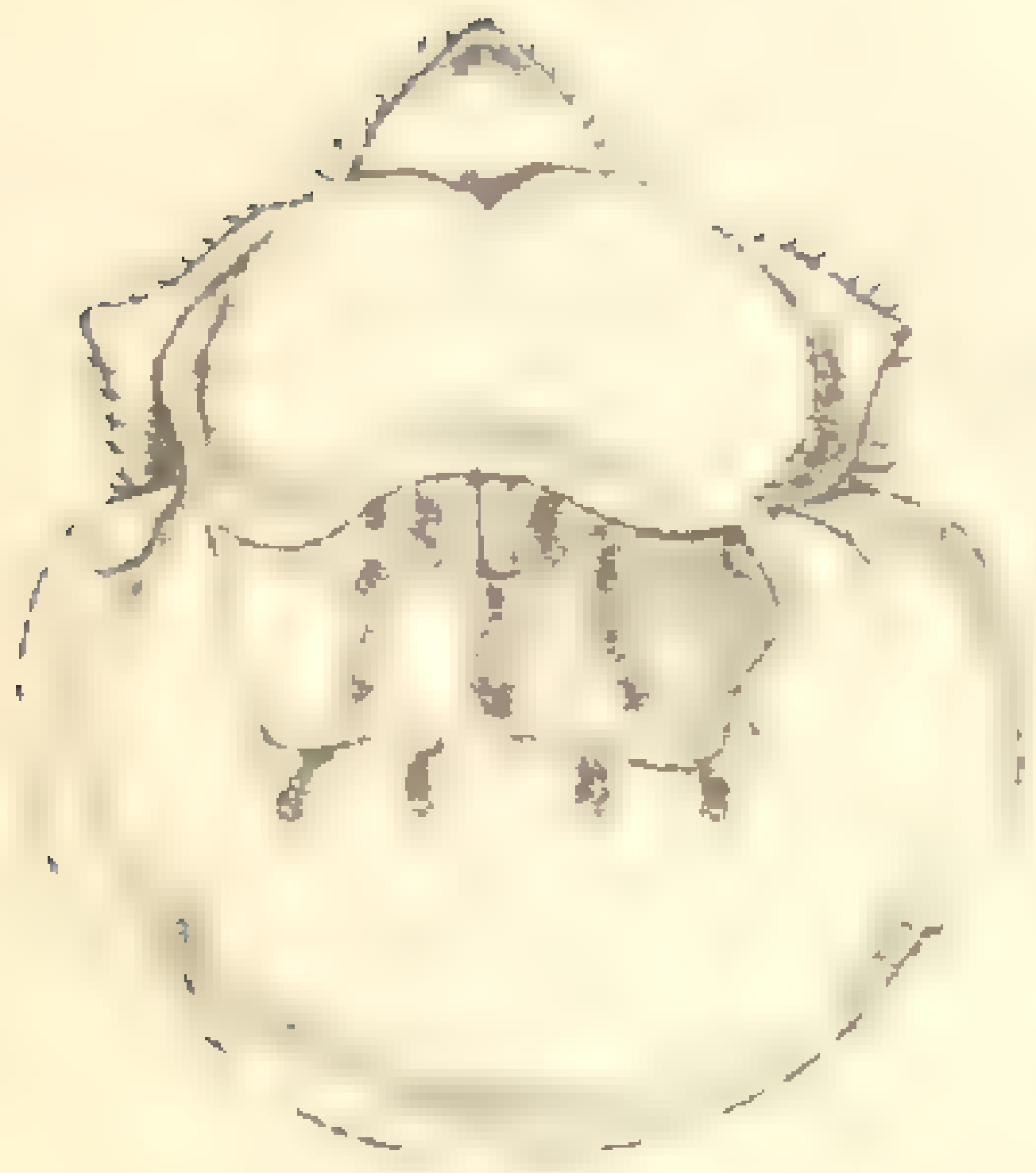
DESCR. *Stem* erect, branches cylindric and covered with white bark. *Branches* very spreading, leafy towards the apex; branchlets covered with a very fine gray hoary pubescence, as is the whole inflorescence. *Leaves* opposite, three to five-foliolate; petiole slender, one to three inches long; leaflets sessile, as long as or longer than the petiole, elliptic or elliptic-obovate, with a rather abruptly narrowed point, quite entire, glabrous on both surfaces, membranous, pale green. *Cymes* in the opposite axils, capitate, on very slender naked peduncles that are much longer than the petioles, three to six-flowered. *Flowers* sessile or very shortly pedicelled, with a minute bract at the apex of the pedicel. *Calyx* about one-eighth of an inch long, between cylindric

MAY 1ST, 1876.

and campanulate, five-toothed, hoary. *Corolla-tube* three times as long as the calyx, externally pale violet, streaked with purple within. *Limb* two-thirds of an inch in diameter, pale violet, very spreading; upper lip of two convex broadly-ovate lobes smaller than the lower lip, which has three nearly orbicular convex lobes. *Stamens* slightly exserted; filaments inserted at a ring of hairs in the corolla-tube; anthers blue, cells divaricate, connective globose. *Ovary* obovoid, sessile, slender; stigma two-toothed.—*J. D. H.*

Fig. 1, Corolla laid open; 2, anther; 3, pedicel and calyx; 4, ovary:—*all magnified.*

6231



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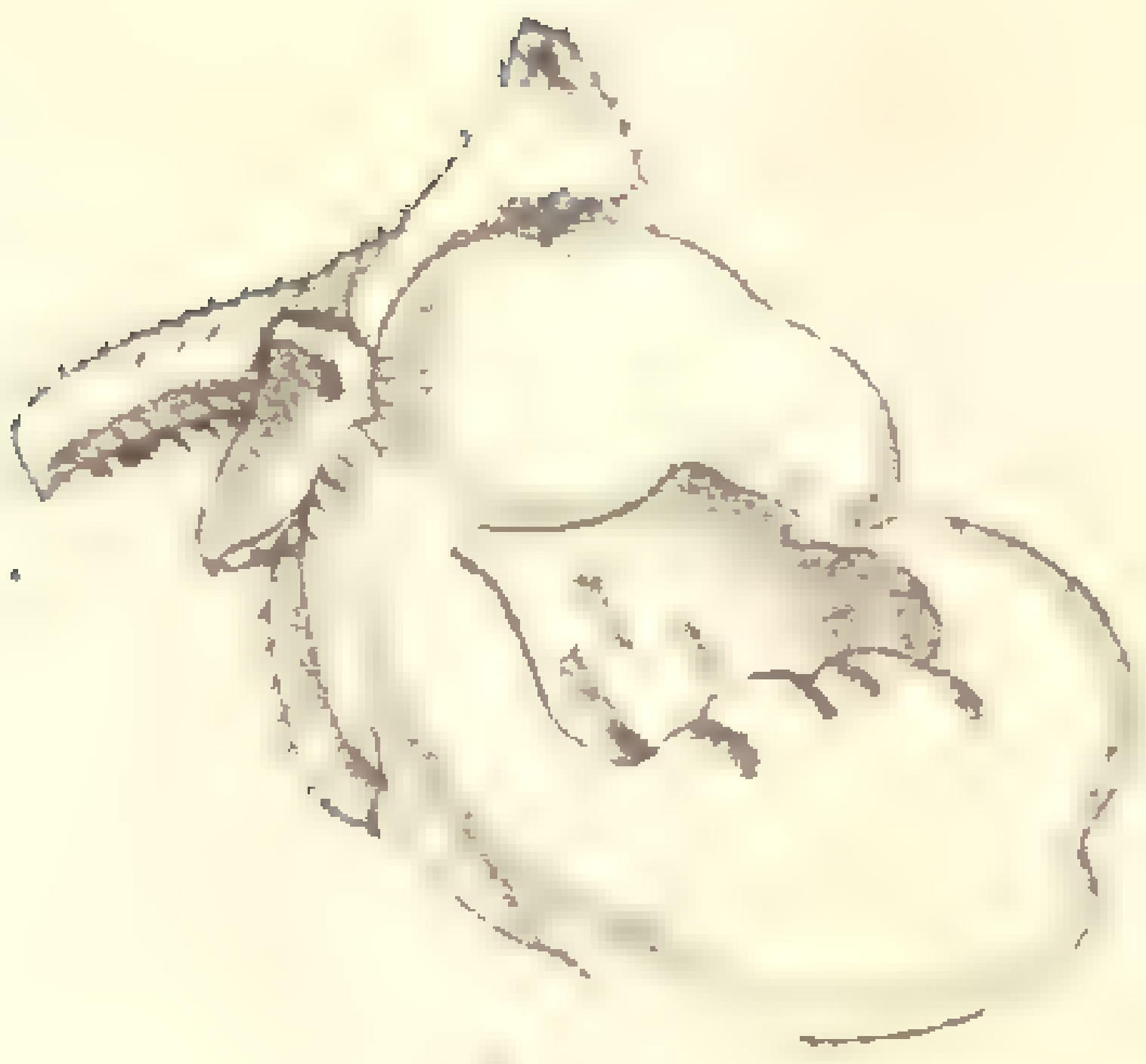

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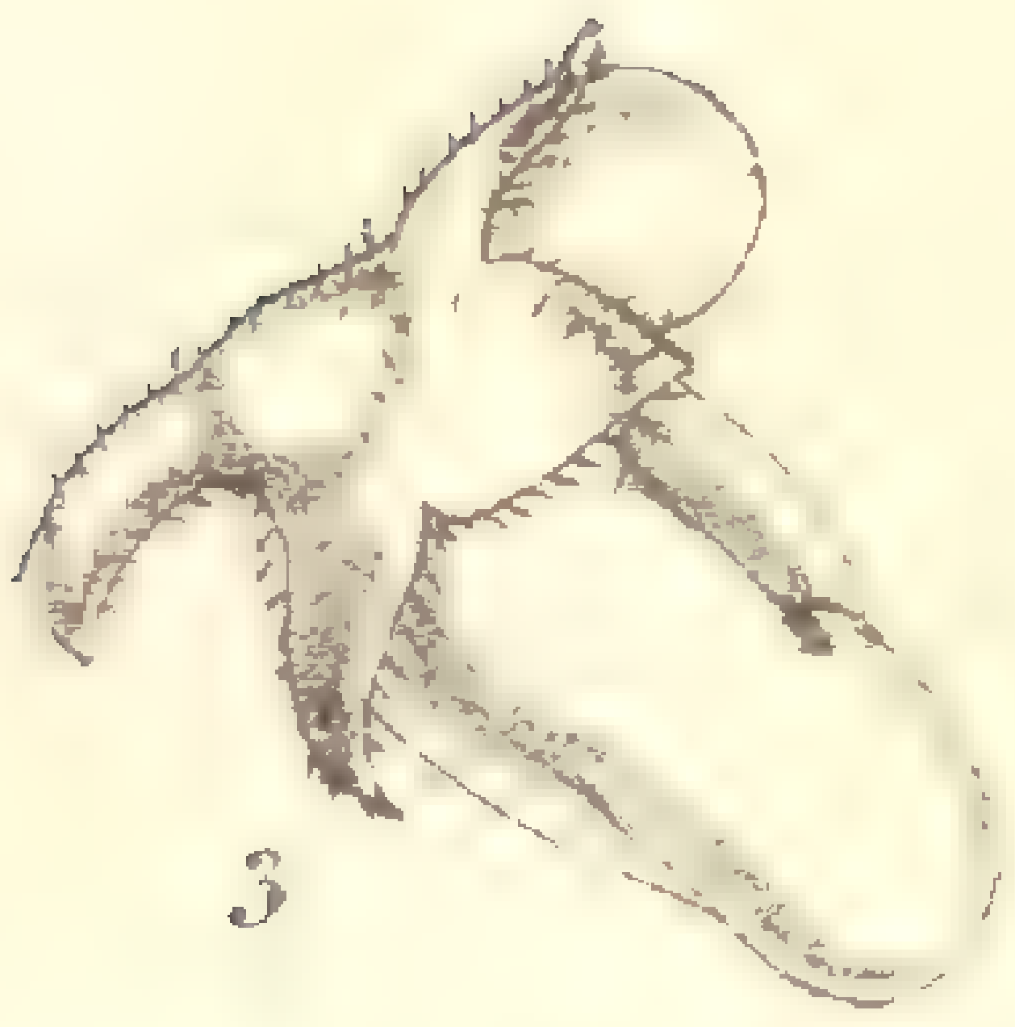

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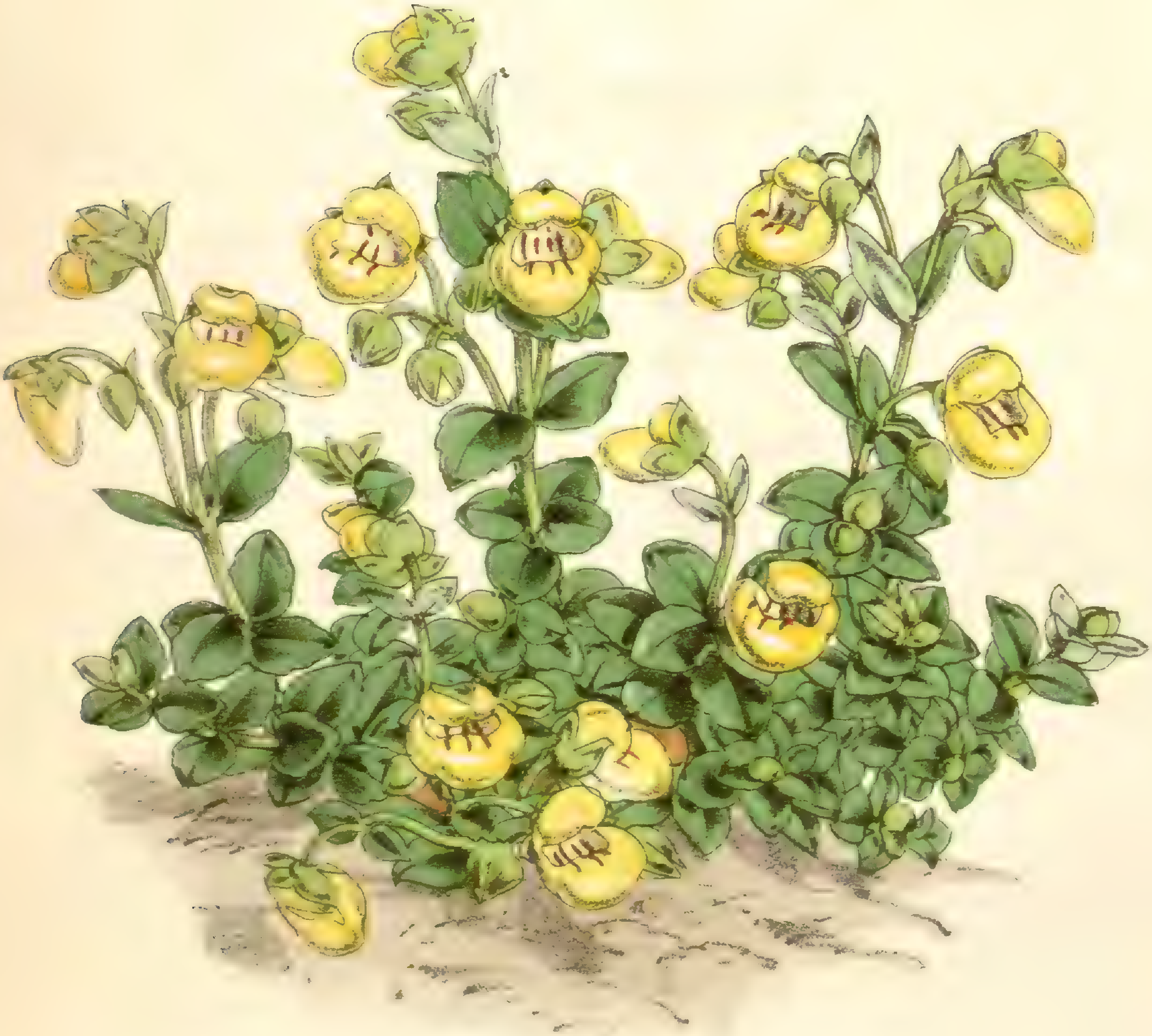

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TAB. 6231.

CALCEOLARIA TENELLA.

Native of Chili.

Nat. Ord. SCROPHULARIACEÆ.—Tribe. CALCEOLARIEÆ.

Genus CALCEOLARIA, *Linn.* (*Benth. et Hook. f. Gen. Plant.*, vol. ii., p. 929).

CALCEOLARIA (Eucalceolaria) *tenella*; pusilla, perennis, herbacea, prostrata, superne viscidula, ramis decumbentibus radicantibus, foliis brevissime petiolatis ovatis orbiculatisve subacutis marginibus recurvis v. planis integerrimis v. remote crenatis utrinque viridibus, corymbis subsessilibus v. pedunculatis laxe paucifloris, calycis laciniis late triangulari- ovatis subacutis puberulis, corollæ glabræ labiis alte connatis superiore concavo calycem superante, inferiore duplo majore orbiculato valde inflato ad medium aperto.

C. tenella, *Pæp. et Endl. Nov. Gen. et Sp.*, vol. iii., p. 76, t. 287; *Benth. in DC. Prodr.*, vol. x., p. 214; *C. Gay, Flor. Chil.*, vol. v., p. 193.

A very elegant little plant, of a bright glossy green, with pale golden flowers spotted with red within the corolla. It was discovered by the German traveller Pœppig in 1823, and gathered subsequently by the English botanical collector, Bridges, growing in sandy places and on wet rocks near the rivers of the Andes, and in Valdivia, and has since been collected by Lechler, Philippi, and various other botanists, up to an elevation of 4-5000 ft.

Seeds of it were sent by Mr. G. Downton, when travelling for Messrs. Veitch, from which the specimen here figured was raised in 1873. It appears to be quite hardy, and like many other Chilian plants yet to be introduced, including not a few Calceolarias, it will prove an attractive ornament to the rock-garden.

DESCR. A diffuse, leafy, straggling, perennial *herb*, more or less clothed with a fine viscid pubescence on the inflorescence, branchlets, and sometimes on the leaves. *Branches* slender, prostrate and rooting, with ascending branchlets. *Leaves* in loose or close-set pairs, shortly petioled or sessile, one-fourth to one-third of an inch long, ovate or orbicular-ovate, subacute, quite entire or distantly crenate, green on both surfaces. *Corymbs* few-flowered, terminating the branch-

MAY 1ST, 1876.

lets, subsessile or on elongated slender peduncles, which are sometimes six inches long, and simple or dichotomously branched; bracts of lower flowers leaf-like, of upper smaller, oblong. *Flowers* pedicelled, yellow, about half an inch long, shortly pedicelled, golden-yellow, with orange-red spots within the lower lip. *Sepals* triangular-ovate, obtuse or subacute, puberulous and viscid. *Corolla* glabrous, upper lip transversely oblong or reniform, inflated, united for three-fourths of its margins with the lower, which is three times as large, suborbicular, inflated. *Capsule* broadly ovoid, with a contracted, upcurved, obtuse apex hardly exceeding the calyx. *Seeds* very minute, red-brown, cylindric-oblong, abruptly apiculate at the rounded apices, grooved, and minutely transversely striolate.—*J. D. H.*

Figs. 1, 2, and 3, Front, oblique, and lateral views of flower:—*magnified.*

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TAB. 6232.

ARUNDO CONSPICUA.

Native of New Zealand.

Nat. Ord. GRAMINEÆ.—Tribe ARUNDINEÆ.

Genus ARUNDO, *Linn.* (*Endl. Gen. Plant.*, p. 91.)

ARUNDO *conspicua;* dense cæspitosa, culmis cum foliis basi crassitie digitis, foliis effusis erecto-recurvis angustis crassis coriaceis concavis lævibus marginibus involutis scaberulis, apicibus longissimis scabridis, costa subtus valida, vaginis creberrime sulcatis, ligula e fasciculo pilorum tenuissimorum, culmis floriferis 3-8-pedalibus, panicula 1-2-pedali effusa copiose ramosa, ramis pendulis, spiculis ⅔ poll. longis pallide stramineis nitidis 1-3-floris, glumis vacuis æqualibus longissime acuminatis, glumis floriferis in aristam gracillimam tortam spiculam æquantem attenuatis basi pilis sericeis elongatis instructis, palea oblonga glumis multoties minore.

A. conspicua, *Forst. Prodr.*, n. 48; *Willd. Sp. Pl.*, vol. i., p. 456; *Hook. f. Flor. Nov. Zel.*, vol. i., p. 299; *Handbook of N. Zealand Flor.*, p. 331.

A. australis, *A. Rich Voy.* "*Astrolabe,*" vol. i., p. 121; *A. Cun. in Hook. Comp. Bot. Mag.* vol. ii., p. 371.

A. Richardi, *Endl.*

A. Kakao, *Steud. Synops. Glumac.*, vol. i., p. 134.

CALAMAGROSTIS conspicua, *Gmel. Syst.*, vol. i., p. 172; *Kunth Enum. Plant.*, vol. i., p. 238.

ACHNATHERUM conspicuum, *Pal. Beauv. Essais*, p. 20.

GYNERIUM? zelanicum, *Steud. l.c.*, p. 198.

This, which is perhaps the most beautiful Grass known to me, is, though long ago introduced into England through Kew, now for the first time figured in any work. It was discovered by Banks and Solander during Cook's first voyage, and gathered during his second voyage by Forster, who published it in his "Florulæ insularum australiam Prodromus" in 1786. It abounds throughout the Island of New Zealand, from the Bay of Islands to Otago, and in the Chatham Islands, growing in wet places, but is found in no other part of the world. It is the Toe Toe and Kakaho of the natives, who use the culms for lining their houses with a kind of reed-matting.

Though long grown and increased, and a most ornamental plant for greenhouse and conservatory culture, holding its

MAY 1ST, 1876.

splendid shining panicles for months, it is seldom used for indoor decoration, and is rarely seen in the open border, where it resists an ordinary winter. In general habit it resembles the *Gynerium argenteum*, but is smaller and incomparably more attractive, both from its elegant habit and the brilliant lustre of its pale straw-coloured silky spikelets. It was introduced into Kew about the year 1843, I believe by the late Dr. Sinclair, R.N., and holds its flowers almost throughout the year.

Descr. *Tufts* three to five feet across, circular, the leaves drooping gracefully all round. *Culms* as thick as the thumb at the base. *Leaves* two to four feet long, very slender, involute, coriaceous, deeply closely channelled, upper surface margins and long slender point scabrid; sheath quite smooth and shining; ligule of very soft silky hairs. *Flowering-culm* three to eight feet high, strict, leafy, the leaves reflexed. *Panicle* inclined, one to two feet long, drooping, with innumerable pendulous branches all hanging to one side; branches whorled, and branchlets very slender, smooth. *Spikelets* pedicelled, two-thirds of an inch long, slender, one to three-flowered, with sometimes a fourth imperfect flower, pale straw-coloured. *Empty glumes* nearly equal, membranous, narrow-lanceolate, ending in almost capillary awns. *Flowering-glumes* also narrow-lanceolate, ending in twisted capillary awns that equal those of the empty glumes, surrounded at the base by long silky hairs. *Palea* oblong, short.—*J. D. H.*

Fig. 1. Diminished view of a portion of a plant; 2, portion of leaf, and 3, of a panicle, *of the natural size*; 4, margin of leaf, *magnified*.

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8. Great Fall of the Umgeni at Howick.
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BOTANICAL MAGAZINE.

CONTENTS OF No. 377, MAY, 1876.

Tab. 6228.—HOODIA GORDONI.
,, 6229.—ODONTOGLOSSUM PRÆNITENS.
,, 6230.—VITEX LINDENI.
,, 6231.—CALCEOLARIA TENELLA.
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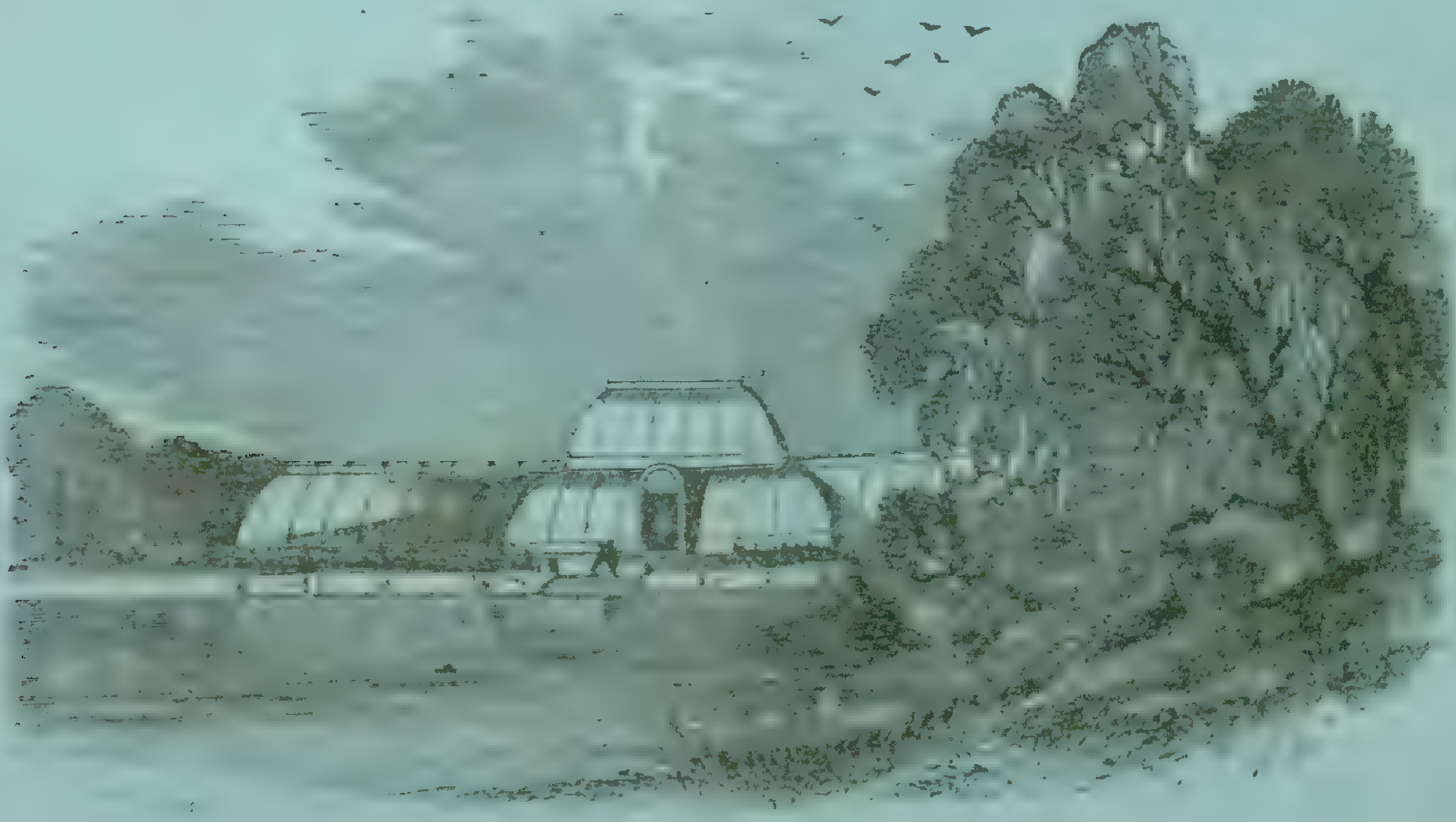

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6333

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TAB. 6233.

MONOPYLE RACEMOSA.

Native of New Grenada.

Nat. Ord. GESNERACEÆ.—Tribe GESNEREÆ.

Genus MONOPYLE, *Moritz; (Benth. et Hook. f., Gen. Plant.*, vol. ii., p. 997).

MONOPYLE *racemosa*, tenuiter pubescens, caule erecto, foliis petiolatis ovatis v. ovato-lanceolatis acuminatis serrulatis basi æqualibus acutis, racemo dense multifloro erecto, bracteis parvis oblongis recurvis, pedicellis calycem æquantibus, calycis lobis ovato-rotundatis obtusis patentibus superiore minore, corollæ albæ tubo lato ventricoso inferne gibbo, ore modice contracto, limbi brevis patentis lobis brevibus recurvis 3 inferioribus irregulariter inciso-dentatis.

MONOPYLE racemosa, *Benth. in Hook. Ic. Pl.* sub tab. 1198.

A very handsome gesneraceous plant, referred by Bentham to a South American genus, of which no species has previously been figured, or perhaps even cultivated in England, though, judging from the dried specimens of the six or eight known kinds, all are beautiful things and well worthy of stove cultivation. In the form of the corolla and its toothing *M. racemosa* approaches nearer to the true Gloxinias than to the other species of *Monopyle*, nor has it the unequal pair of leaves or unequally-based leaves that prevail in the latter genus. The American genera of Gesneraceæ, however, present unusual difficulties in respect to their limitation, and it remains to be seen whether the fruit of *Monopyle racemosa* resembles that of its supposed congeners in its very narrow clavate form.

M. racemosa was raised from New Grenadan seeds by Messrs. Veitch, who sent the specimen here figured for determination in July of last year.

DESCR. A rather stout herb, clothed throughout with a soft pubescence. *Stem* cylindric, dark brown-purple. *Leaves* rather close-set, opposite, petioled, pairs equal, ovate-lanceolate, acuminate, serrulate, base equal and subacute, upper surface bright pale green; petiole a quarter to half an inch long, reddish, with a bright pale-green swollen blotch at its base, upon which blotch is an eye-like purple dot

on each side, forming a curious contrast to the dark stem. *Raceme* stout, erect, terminal, many-flowered, simple or compound at the base; rachis stout, green; bracts small, oblong, obtuse, recurved, green; pedicels about a quarter of an inch long. *Calyx-tube* hemispheric; limb expanded, of five unequal broadly-ovate obtuse lobes, the upper smallest. *Corolla* white, one inch long, three-quarters of an inch in diameter across the broadest part of the ventricose tube, which is slightly curved and gibbous on the under side; limb three-quarters of an inch broad, short, recurved, five-lobed, the lobes very broad, truncated, the three lower irregularly and rather deeply toothed; obscurely spotted within. *Stamens* included, filaments slender, curved; anthers cohering cross-wise, small, two-celled, with longitudinal dehiscence; staminode minute, subulate. *Disk* depressed. *Style* short, curved; stigma obtuse.—*J. D. H.*

Fig. 1, Pedicel, calyx-limb, disk, and style; 2, corolla laid open:—*both enlarged.*

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Tab. 6234.

DRACÆNA Saposchnikowi.

Native country unknown.

Nat. Ord. Liliaceæ.—Suborder Asparagaceæ.—Tribe. Dracæneæ.

Genus Dracæna, *Vand.: (Baker in Journ. Linn. Soc.*, vol. xiv., p. 523.)

Dracæna *Saposchnikowi;* arborea, dichotomiter ramosa, foliis dense rosulatis sessilibus ensiformibus tripedalibus subcoriaceis viridibus, marginibus concoloribus, costa ad faciem inferiorem præter apicem perspicua, paniculæ amplæ pedunculatæ deltoideæ ramis deflexis, bracteis minutis deltoideis, pedicellis 2-6-nis prope apicem articulatis, perianthio albido-viridulo 4 lin. longo, segmentis ligulatis tubo campanulato 3-4-plo superantibus, genitalibus inclusis.

D. Saposchnikowi, *Regel Gartenflora*, vol. xx., p. 323, tab. 705; *Revis*, p. 39; *Baker in Journ. Linn. Soc.*, vol. xiv., p. 528.

This is a species of tall, tree-like habit, of which the native country is unknown. It has been long in the Kew collection, but did not flower till the spring of 1875. The plant was described and named by Dr. Regel in 1871, from specimens which flowered in the garden of the Russian gentleman after whom it is named, who procured it from Herr Wagner, of Riga. It has close allies both in Tropical Asia and Tropical Africa. It is remarkable for its very dense rosettes of rigid, sword-shaped leaves, and for its very small flowers, which, although the panicle is ample and diffuse, are less than those of any other known species.

Descr. *Trunk* arborescent, reaching in the Kew plant a height of ten feet, repeatedly forked when fully developed. *Leaves* in a very dense rosette at the end of the branches, sessile, ensiform, reaching a length of two and a half to three feet, one and a half inch broad at the middle, narrowed to less than an inch above the dilated base, bright green, firm in texture, with a concolorous edge, and a midrib which is distinctly marked on the lower side except towards the tip. *Flowers* in ample, deflexed, deltoid, peduncled panicles with decurved branches; pedicels two to six in a cluster, one-eighth to one-sixth of an inch long, articulated just below the tip; bracts deltoid or lanceolate, whitish, usually shorter

June 1st, 1876.

than the pedicels. *Perianth* greenish-white, cylindrical, one-quarter to one-third of an inch long, the ligulate, spreading segments three or four times as long as the campanulate tube. *Stamens* inserted at the throat of the tube, shorter than the segments. Style included; stigma obscurely three-lobed.—*J. G. Baker.*

6335

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TAB. 6235.

COTYLEDON TERETIFOLIA.

Native of South Africa.

Nat. Ord. CRASSULACEÆ.

Genus COTYLEDON, *Linn.*; (*Benth. et Hook. f., Gen. Plant.*, vol. i., p. 659).

COTYLEDON (Paniculatæ)' *teretifolia*; glanduloso-pubescens v. tomentosa, caule robusto ascendente, foliis sessilibus hexastiche oppositis 2-5-pollicaribus subcylindraceis crasse carnosis apicibus subspathulato-rotundatis et discoloribus, pedunculo crasso erecto nudo v. foliis paucis oppositis alternisve instructo, cyma effusa ramis patentibus, calycis lobis triangulari-ovatis, corollæ aureæ tubo brevi, lobis elongatis lineari-oblongis acutis patenti-recurvis, filamentis conniventibus exsertis, glandulis hypogynis parvis, carpellis in stylos elongatos apice patentes attenuatis, stigmatibus capitellatis.

CRASSULA teretifolia, *Thunb. Prod. Fl. Cap.*, p. 83; *DC. Prod.*, vol. iii., p. 397; *Harv. et Sond. Fl. Cap.*, vol. ii., p. 373.

The Cape Crassulaceæ, once the favourites of the greenhouse, have, with the exception of some gaudy *Crassulas*, long gone out of fashion amongst cultivators, or are relegated to the specialist or botanist. Nevertheless, they comprise a series of as beautiful and easily cultivated plants as any group of the vegetable kingdom, and that their day will dawn again is certain. Already, indeed, the rich collection in the Succulent House at Kew has many admirers, and, thanks especially to this and to the example and liberality of Mr. Wilson Saunders, the number of cultivators of this class of plants who regularly correspond with Kew is very considerable.

The genus *Cotyledon*, which is represented in England only by the curious Navel-wort, so common on the walls and rocks of the south and west coasts of the British Isles, and in Europe, North Africa, and West Asia by a few other species, attains its maximum of development in South Africa, where upwards of twenty species are known, and from whence not a small number have been so imperfectly described that they cannot be identified; for, indeed, it is a genus that can only be studied upon living specimens. In South Africa it is chiefly confined to the south-western corner of the continent, most of the species occurring in the Cape Town district. To this

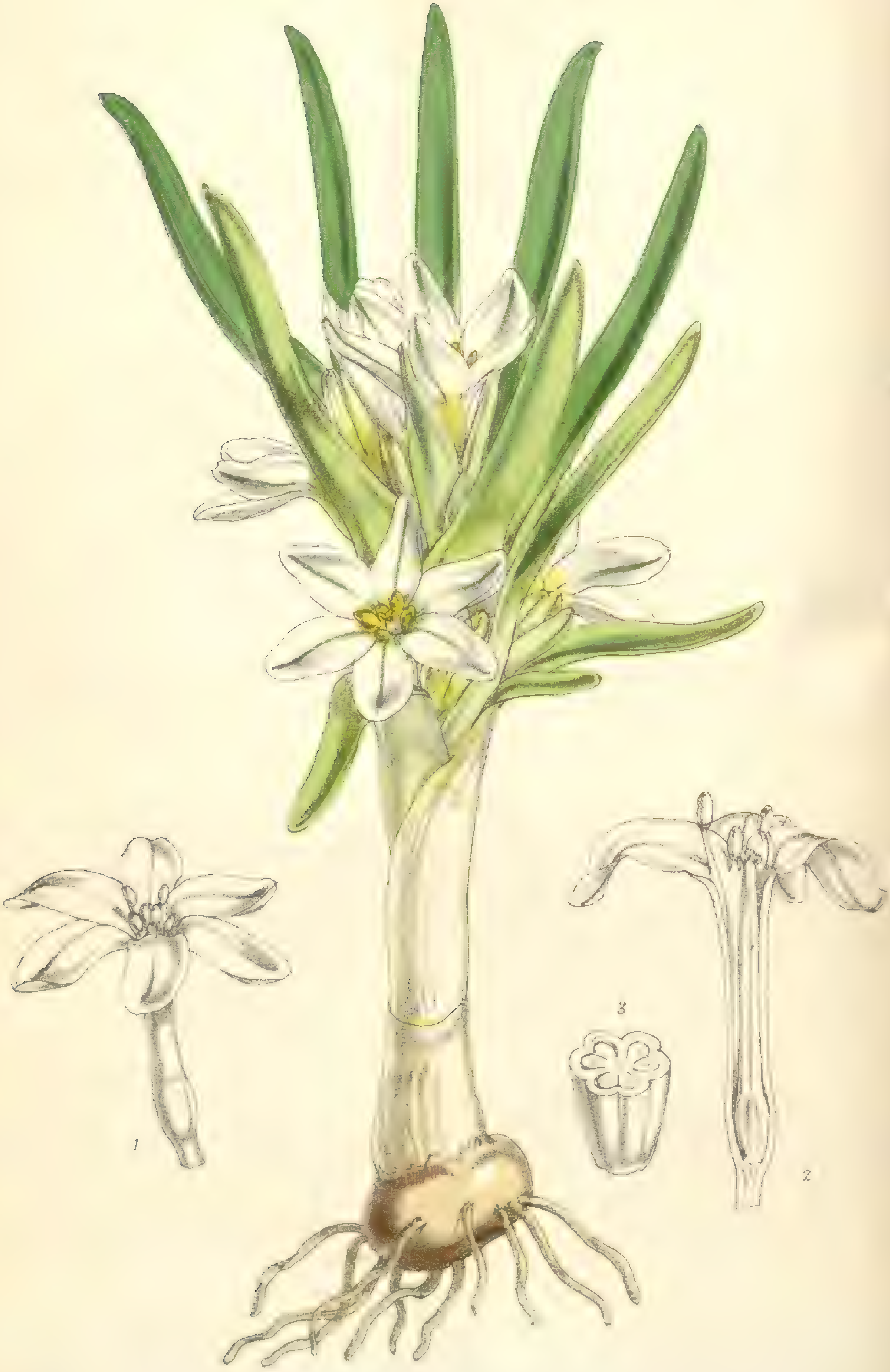
JUNE 1ST, 1876.

C. teretifolia is rather an exception, it being found as far to the east as the province of Graaf Reinet and Somerset, where it forms an undershrub on the hills. Living specimens have been received at Kew from Mr. Wilson Saunders in 1873, and from the late Mr. D. Hanbury, which flower in the month of July.

DESCR. A branching undershrub, clothed with a more or less dense pubescence of short, soft hairs, which are glandular on the inflorescence especially. *Branches* as thick as the finger, and a foot or more long. *Leaves* opposite, in six series round the branches, three to eight inches long, cylindric or nearly so, contracted towards the sessile base, rather expanded towards the tip into a triangularly rounded discoloured apex, the old ones obscurely flattened and channelled down the middle, pale green except the red-brown apex. *Peduncle* six to eighteen inches high, stout, terete, naked, or with one or two opposite or alternate small leaves. *Cyme* four to ten inches in diameter, nearly flat-topped; bracts scattered, linear, deciduous; pedicels spreading, half to one and a half inch long. *Calyx-tube* obscure, lobes of variable length and breadth, triangular-ovate, acute, glandular. *Corolla* bright yellow, tube rather longer than the calyx-lobes, five-angled; limb of five spreading and reflexed narrow acute segments, which are glandular on the back. *Stamens* erect, exserted, with the filaments slender and conniving by their middle; anthers very small. *Hypogynous glands* minute, emarginate. *Carpels* elongate, narrowed into slender styles with radiating tips; stigma capitate.—*J. D. H.*

Fig. 1, Flower; 2, carpels and hypogynous glands:—*both magnified.*

6236



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TAB. 6236.

MILLA LEICHTLINII.

Native of Chilian Andes.

Nat. Ord. LILIACEÆ.—Tribe MILLEÆ.

Genus MILLA, *Cav.*; (*Baker in Journ. Linn. Soc.*, xi., 378).

MILLA *Leichtlinii;* cormo magno globoso collo elongato, foliis 5-6 synanthiis erectis loratis viridibus obtusis facie canaliculatis umbellas superantibus, scapis brevissimis, umbellis 1-3-floris, spathæ valvis 1-2 lanceolatis membranaceis, pedicellis crassis brevissimis, perianthii rotati tubo cylindrico viridulo pollicari, segmentis albis oblongis patulis tubo duplo brevioribus dorso viridi vittatis, staminibus prope faucem tubi obscure biseriatis antheris parvis oblongis, ovario oblongo, stylo elongato, stigmate obscure tricuspidato.

M. Leichtlinii, *Baker in Gard. Chron.*, 1875, p. 234.

This is a very distinct new species of *Milla*. It is a native of the Chilian Andes, and was imported to Europe by our indefatigable correspondent, Max Leichtlin, Esq., who presented a living plant and seeds to the Kew collection, where it flowered at the latter end of January, 1874. It is quite hardy, and the flowers are slightly fragrant. In structure it comes near *M. porrifolia*, Baker (Bot. Mag., t. 5997), but the habit is totally different, the peduncles and pedicels being so short as to mix up the flowers amongst the leaves near the surface of the soil, and here the flower is much larger, with a tube twice as long as the segments, instead of only a third or half as long. There is a *M. sessiliflora* in Chili of similar habit to the present species, which has not yet been introduced, with leaves a line broad and solitary flowers with narrow segments.

DESCR. *Corm* globose, an inch thick, sending out copious radical fibres, and furnished with a long, thick neck sheathed by the bases of the outer leaves. *Produced leaves* about half-a-dozen to a cluster, contemporary with the flowers and overtopping them, erect, glabrous, bright green, lorate, obtuse, three to four inches long, a quarter of an inch broad, channelled down the face. *Umbels* two to three to a corm,

JUNE 1ST, 1876.

each one to three-flowered, the peduncle not rising above the surface of the soil; spathe one and a half inch long, formed of one or two lanceolate, membranous valves; pedicels very short. *Perianth* rotate, one and a half to one and three-quarters of an inch long, with a greenish cylindrical tube twice as long as the oblong, spreading segments, which are pure white on the face, but marked with a distinct green keel down the back. *Stamens* obscurely biseriate, inserted near the throat of the tube; filaments flattened, greenish, a quarter of an inch long; anthers small, oblong, yellow, versatile. *Ovary* oblong, sessile, with very numerous horizontal ovules in each cell; style filiform, reaching to the throat of the tube; stigma obscurely tricuspidate. *Capsule* oblong, membranous, half an inch long. *Seeds* black, subglobose.—*J. G. Baker.*

6237

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TAB. 6237.

ODONTOGLOSSUM HALLII.

Native of Peru and New Grenada.

Nat. Ord. ORCHIDEÆ.—Tribe VANDEÆ.

Genus ODONTOGLOSSUM, *H. B. et K.*; (*Lindl. Fol. Orchid.*, *Odontoglossum*).

ODONTOGLOSSUM (Euodontoglossum) *Hallii*; pseudobulbis ovatis compressis marginibus acutis, foliis pedalibus ensiformibus acuminatis basi angustatis, scapo gracili elongato, racemo multifloro laxo nutante, bracteis ovato-lanceolatis acuminatis, sepalis petalisque consimilibus oblongo-lanceolatis caudato-acuminatis aureis badio late fasciatis, labelli albi maculis 5 sanguineis notati lobis lateralibus angustis erosis terminali dilatato transverse oblongo eroso apice emarginato in sinu aristato, disco basi cristis 2 pectinatis ornato, columnæ alis apicis versus pectinatis.

ODONTOGLOSSUM Hallii, *Lindl. in Bot. Reg.*, sub t. 1992; *Fol. Orchid.*, *Odontogloss.*, p. 3; *Bateman Monog. Odontogloss.*, t. 21; *Walp. Annal.*, vol. vi., p. 828; *Reich. Xen. Orchid.*, vol. i., p. 63.

Though differing somewhat in marking and slightly in characters from the typical form of *O. Hallii* figured by Bateman, this must unquestionably be referred to that most variable species; the only other to which it is allied being *O. luteo-purpureum*, Lindl. (Bateman, l.c., t. 17), which it approaches in the more pectinate wings of the column and in the broad terminal lobe of the lip, whilst it differs from the latter plant in the colour of the flowers and the much smaller bracts. I cannot, however, doubt that these two supposed species are referable to varieties of one, as a consideration of the varieties they severally exhibit tends to show. Mr. Bateman indicates the clawed sepals and petals as chiefly distinguishing *O. Hallii* from *luteo-purpureum*, but I can find no difference in this respect either in his drawings or in native specimens; in fact, those organs are not clawed in either species.

O. Hallii is a native of the Temperate Cordilleras of Peru and New Grenada, where it attains an elevation of eight thousand feet. The specimen here figured was flowered by Messrs. Backhouse, of York, in March, 1866.

DESCR. *Pseudobulbs* three to five inches long, ovate, compressed, with acute margins. *Leaves* a foot long, ensiform, acuminate, narrowed to the base, channelled in front, keeled on the back, deep green. *Scape* one to two feet long, slender; raceme as long, many-flowered; bracts ovate-acuminate, much shorter than the pedicel, which, with the ovary, is an inch long. *Perianth* three inches in diameter. *Sepals and petals* spreading, subsimilar, elliptic-lanceolate, caudate-acuminate, with recurved points, golden yellow, with broad transverse bands and spots of rich yellow-brown. *Lip* fiddle-shaped in outline, white, with a broad heart-shaped blood-red spot on the disk of the middle lobe, and two smaller ones on each side of the lateral lobes, margins erose all round; lateral lobes narrow, terminal, much dilated, transversely oblong, emarginate, with a short awn in the sinus; disk with two parallel pectinate crests extending from the base of the column between the lateral lobes, the spines of the crests curving forwards and outwards. *Column* white, its wings near the apex pectinate, with a few decurved spines.—*J. D. H.*

Fig 1, Column and lip:—*enlarged.*

6238

W. Fitch del. et lith.
Vincent Brooks Imp.

TAB. 6238.

HEPTAPLEURUM POLYBOTRYUM.

Native of Java.

Nat. Ord. ARALIACEÆ.—Series PANACEÆ.

Genus HEPTAPLEURUM, *Gærtn.*; (*Benth. et Hook. f. Gen. Plant.*, vol. i., p. 942).

HEPTAPLEURUM *polybotryum*; subscandens, fere glaberrimum, caule elato gracili simpliciusculo verrucoso, foliis gracile petiolatis digitatis, foliolis 5-7 petiolulatis oblongo-ellipticis -ovatis v. -obovatis caudato-acuminatis integerrimis basi cuneatis v. rotundatis, petiolo gracili basin versus verrucoso, petiolulis basi incrassatis apice subarticulatis, stipula axillari, racemis axillaribus et ad apicem caulis subverticillatim confertis elongatis gracilibus, pedunculis gracilibus, umbellulis 8-16-floris, floribus parvis 5-andris, calycis hemispherici limbos obsoletos, petalis ovatis calyptratim cohærentibus, filamentis elongatis, antheris parvis didymis, stigmatibus 5 papillæformibus.

HEPTAPLEURUM polybotryum, *Seem. Journ. Bot.*, vol. iii., p. 78.

PARATROPIA polybotrya, *Miq. Fl. Ind. Bat.*, vol. i., pars. i., p. 755.

P. TESYMANNIANA, *Hort.*

? SCIODAPHYLLUM subavene, *Blume Bijd.*, p. 876.

A very handsome, free-growing plant, of the large tropical family of which the common Ivy is one of the few northern representatives. The genus to which it belongs, long and well known under the name of *Paratropia* (a name which must give way to the prior one of *Heptapleurum*), comprises upwards of sixty species, all natives of the Old World, some of which are amongst the most common and handsome trees of the Indian forests, being remarkable for the density of their evergreen foliage.

H. polybotryum is a native of the mountain forests of Java, where it attains the elevation of four thousand three hundred feet, and whence specimens from various collectors are preserved in the Kew Herbarium. It has been long in cultivation at Kew, having been received in 1860 from the late Dr. Miquel, at that time Professor of Botany, and in charge of the Botanic Gardens of Utrecht. It flowers in the winter months, and is probably common in Continental gardens, as it appears in Linden's catalogue under the name of *Paratropia Teysmanniana*, the provisional name under which it was received at Kew from Dr. Miquel.

JUNE 1ST 1876.

DESCR. A slender, sparingly-branched, large shrub that climbs or supports itself amongst the surrounding trees of the forest, and in cultivation requires the support of a rafter or stout staff, glabrous, except the young racemes, which have a minute, scattered, and very deciduous stellate pubescence. *Stem* covered with hemispheric warts. *Leaves* alternate, digitate; stipule axillary, with its concavity to the stem, embracing the base of the raceme; petiole five to eight inches long, slender, swollen at the base and apex, warted in the lower half; leaflets five to seven, six to eight inches long, petiolulate, oblong-ovate -obovate- or -oblong, caudate-acuminate, quite entire, base rounded or cuneate; petiolule half to one and a half inch long, slender, almost globose at the base. *Racemes* a foot and upwards long, solitary and axillary or terminal and crowded, slender, spreading; bracts very deciduous; peduncles slender, half to three-quarters of an inch long; pedicels quarter of an inch long, also slender. *Flowers* small, green. *Calyx-tube* one tenth of an inch long, hemispheric; limb none. *Petals* as long as the calyx-tube, ovate, cohering into a cap. *Filaments* slender, spreading, four times as long as the petals; anthers small, didymous. *Ovary* five-celled; stigmas reduced to hemispheric papillæ. *Fruit* the size of a pepper-corn, globose, five-celled.—*J. D. H.*

Fig. 1. *Reduced* view of whole plant; 2, portion of leaf-stem, with leaf and inflorescence of the *natural size;* 3, flower; 4, the same with the petals cohering in a cap around the anthers; 5, the same with the petals removed; 6, transverse section of ovary:—*all magnified.*

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BOTANICAL MAGAZINE.

CONTENTS OF No. 378, JUNE. 1876.

Tab. 6233.—MONOPYLE RACEMOSA.
,, 6234.—DRACÆNA SAPOSCHNIKOWI.
,, 6235.—COTYLEDON TERETIFOLIA.
,, 6236.—MILLA LEICHTLINII.
,, 6237.—ODONTOGLOSSUM HALLII.
,, 6238.—HEPTAPLEURUM POLYBOTRYUM.

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6. The Valley of the Umgeni from Table Mountain.
7. The Lower Falls of the Umgeni.
8. Great Fall of the Umgeni at Howick.
9. Glade at Aliceville, with Wild Bananas and Date-palms.
10. Euphorbia Caput-Medusæ.
11. Arduinia grandiflora—Amatungulu.
12. Scarlet Cyrtanthus—Flame-lily.
13. Thunbergia Natalita.
14. Portrait of Langalibalele, Chief of the Amahlubi Kaffirs.
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16. Kranzkop; overlooking the Tugela Valley.

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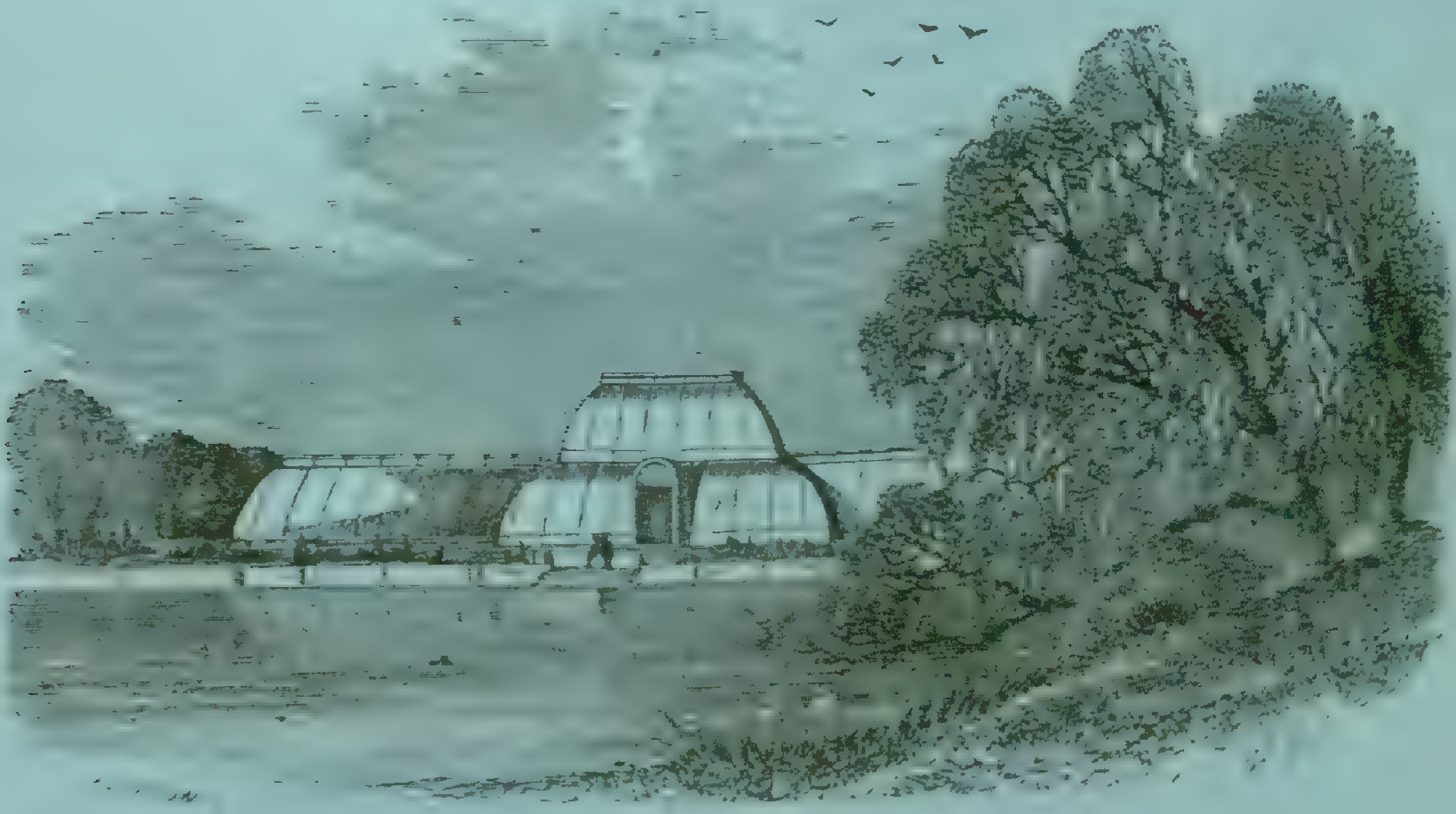

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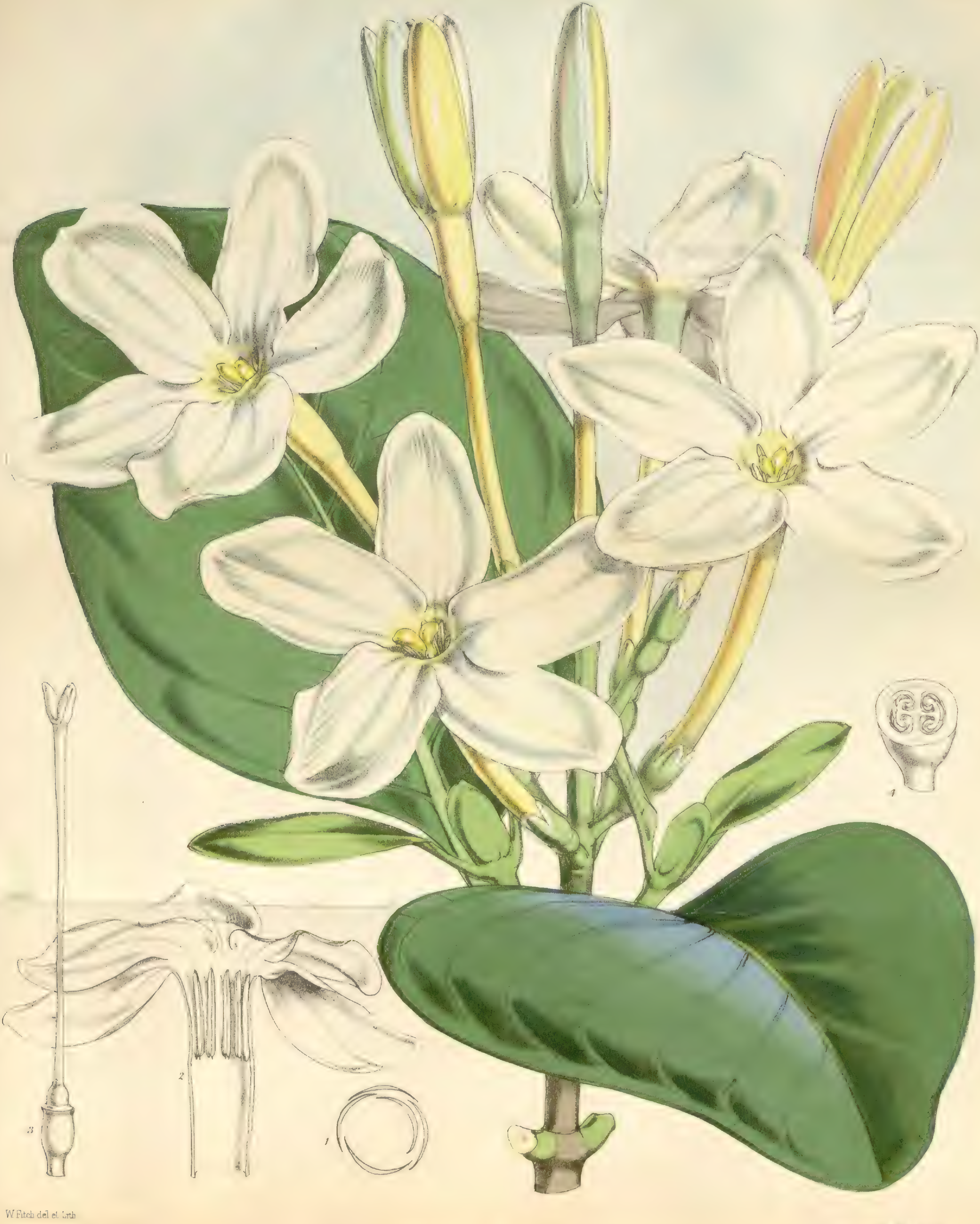

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TAB. 6239.

COSMIBUENA OBTUSIFOLIA, var. LATIFOLIA.

Native of New Grenada.

Nat. Ord. RUBIACEÆ.—Tribe CINCHONEÆ.

Genus COSMIBUENA, *Ruiz et Pav.* (*Benth. et Hook. f. Gen. Plant.*, vol. ii., p. 40).

COSMIBUENA *obtusifolia;* glaberrima, foliis late elliptico-ovatis obtusis coriaceis stipulis magnis oblongis, floribus subcorymbosis pedicellatis, calycis limbo cylindraceo inæqualiter 5-dentato v. 5-lobo, corollæ albæ tubo elongato fauce ampliato, limbi lobis oblongis apice rotundatis imbricatis, antheris sessilibus apicibus exsertis, disco conico truncato, stigmatibus brevibus obtusis.

C. obtusifolia, *Ruiz et Pav. Fl. Per. et Chil.*, vol. iii., p. 3.

BUENA obtusifolia, *DC. Prod.*, vol. iii., p. 356; *Klotzsch. in Hayne Arzneig.*, vol. xiv., t. 15.

CINCHONA grandiflora, *Ruiz et Pav. l.c.*, vol. ii., p. 55, t. 198.

Var. *latifolia*, calycis limbo cylindraceo 5 lobo lobis oblongis obtusis.

BUENA latifolia, *Benth. Plant. Hartweg.*, p. 191; *Walp. Rep.*, vol. vi., p. 69.

This handsome plant seems to be widely spread in the hot valleys of the Andes of Cauca in New Grenada to Tarapoto in Peru, forming a beautiful small tree, twenty to thirty feet high, with white fragrant flowers and a slightly bitter bark. It varies very much in the size and form of the calyx-limb, so much, in short, that I long hesitated before referring the form here figured with that figured by Ruiz and Pavon, in which the calyx-limb is not half the size, and has short, very acute teeth. Specimens from nine different localities preserved in the Kew Herbarium display an almost perfect transition from a calyx-limb upwards of half an inch long with obtuse lobes, to one not one-sixth of an inch long with acute teeth. The flowers, too, vary greatly in size. Those of var. *latifolia* are the largest of any, and most numerous in the corymb. In the "Genera Plantarum," vol. ii., p. 40, I have described the æstivation of the corolla as contorted and twisted either to the right or the left; in the fresh specimens I find them to be twisted and imbricate, whence I suspect that this character, so constant in *Rubiaceæ* as a rule, is in this genus an inconstant one.

C. obtusifolia was sent to Kew by M. Linden, of Brussels, under the name of *Cascarilla grandifolia*, which I do not find in any publication; it grew to a considerable size in the Palm House, but never flowered. A cutting, however, given to Mr. Howard and placed in a stove, speedily flowered, and from it the accompanying drawing was made.

The Peruvians, according to Mr. Spruce, call this plant "Azahar-sisa," because the flowers smell like "Agua de Azahar" (orange-water.)

DESCR. A small glabrous tree. *Leaves* opposite, petioled, three to six inches long, elliptic or rarely more or less ovate or obovate, rounded at the tip, coriaceous, narrowed into the petiole, which is one to one and a half inch long; under-surface pale, nerves obscure. *Flowers* in terminal cymes, peduncles stout, one half to three-quarters of an inch long. *Calyx-tube* obconic or clavate; limb half an inch long, cylindric, coriaceous, deciduous, 5-fid above the middle, lobes obtuse, unequal. *Corolla* white, very odorous; tube three inches long, somewhat dilated for half an inch at the throat; limb spreading, segments five, oblong, rounded at the tip, suffused with red on the outer surface, imbricate and twisted in bud, with two segments inner and one outer. *Stamens* sessile in the throat of the corolla, long, narrow, their tips exserted. *Disk* conical; style slender; stigma bifid.—*J. D. H.*

Fig. 1, Æstivation of corolla-lobes; 2, upper part of corolla laid open; 3, ovary, disk, style, and stigma; 4, transverse section of ovary:—*all enlarged.*

6340

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Tab. 6240.

PESCATORIA LAMELLOSA.

Native of New Grenada.

Nat. Ord. Orchideæ.—Tribe Vandeæ.

Genus Pescatoria, *Reich. f. in Mohl et Schlecht. Bot. Zeit.*, vol. x., p. 667 (1852).

Pescatoria *lamellosa;* pseudobulbis 0, foliis pedalibus sessilibus anguste lanceolatis acuminatis basi angustatis, pedunculis validis 1-floris, bracteis oblongis appressis viridibus, floribus 2½ poll. diam., sepalis flavo-viridibus, dorsali elliptico, lateralibus majoribus oblongis acutis, petalis concoloribus spathulato-oblongis acutis, labello lamina ovato-orbiculari convexo stramineo, crista elevata semicirculari creberrime lamellata, lamellis aurantiacis et brunneis, columna crassa, antice rufo-striata.

Pescatoria lamellosa, *Reich. f. in Gard. Chron.*, vol. iv., 1875, p. 225.

I have again followed my friend, the younger Reichenbach, in keeping up his genus *Pescatoria* (often wrongly spelled *Pescatorea*), adopting his reference of *P. lamellosa* to that genus in the "Gardener's Chronicle" of last year, though inclining more strongly than ever to adhere to the course he adopted in 1861 of reducing *Pescatoria* to *Zygopetalum* (see observations made on figure of *P. Dayana*, tab. 6214). *P. lamellosa* is not nearly so handsome a species as the last-named, though sufficiently attractive; it flowered at Veitch's establishment in August of last year, to which the plants were sent by its discoverer, Mr. Wallis, from New Grenada.

Descr. Densely tufted. *Pseudobulbs* none. *Leaves* a foot long by one to two inches broad, narrowly lanceolate, acuminate, narrowed to the base, membranous, five-ribbed; the sheath one to one and a half inches long, hardly broader than the base of the blade, green, striated. *Peduncles* solitary, stout, three inches long, with two appressed oblong obtuse green obliquely truncate sheaths, and a similar bract appressed to the ovary. *Flower* two and a half inches in diameter, of a nearly uniform yellow-green colour, except the lip, which is yellowish-white with an orange and brown crest. *Dorsal sepal* elliptic, acute; lateral larger, oblong. *Petals* spathulate, oblong, acute. *Lip* nearly orbicular in

July 1st, 1876.

outline, with a cordate base; limb concave with decurved margins; crest semicircular, much raised, formed of narrow close-set concentric plates streaked orange and brown. *Column* very stout, curved, striated down the broad face.—*J. D. H.*

Fig 1, Column; 2, lip:—*both enlarged.*

6241.

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TAB. 6241.

COREOPSIS (TUCKERMANNIA) MARITIMA.

Native of California.

Nat. Ord. COMPOSITÆ.—Tribe HELIANTHOIDEÆ.

Genus COREOPSIS, *Linn.* (*Benth. et Hook. f. Gen. Plant.*, vol. ii., p. 385).

COREOPSIS (Tuckermannia) *maritima;* perennis, glaberrima, caule elato robusto, foliis sparsis bipinnatifidis, segmentis recurvo-divaricatis anguste linearibus acutis integerrimis, pedunculis validis 1-floris, capitulis aureis 3-3½ poll. diam., involucri exterioris bracteis 6-8 herbaceis patentibus anguste lineari-oblongis, interioris bracteis membranaceis 8-10 2-seriatis appressis oblongis obtusis coloratis, receptaculi paleis lineari-lanceolatis acuminatis, fl. radii ad 20 fœmineis, ligulis late lineari-oblongis minute 3-dentatis, fl. disci tubo angusto medio barbellato limbo parvo, achæniis calvis compressis lævibus.

C. (Tuckermannia) maritima, *Nutt. in Trans. Amer. Phil. Soc. New Ser.*, vol. vii., p. 363; *Torr. et Gray, Fl. N. Am.*, vol. ii., p 355.

LEPTOGYNE maritima, *A. Gray in Proc. Amer. Acad. Arts & Sc.*, vol. vii., p. 358.

A native of maritime rocks in California, where it was discovered by Nuttall in 1834-5, and introduced by him into American gardens, and from whom we have dried specimens collected at St. Barbara and at Utah. There are also specimens in the Hookerian Herbarium, collected earlier still by Coulter, but from what precise locality is not indicated. The specimens here figured were received from Mr. Thompson, of Ipswich, and flowered both at Kew and at Ipswich in September, 1873-4. It is described as a perennial in America, but is of annual duration in this country. It must not be confounded with the *Leptogyne maritima*, A. Gray (fide Noblet in Rev. Hortic., 1873, p. 330), a plant of similar habit, but with very much broader and shorter ovate outer involucral bracts, and six to nine very much broader ray flowers, and which is nothing but *Agarista calliopsidea*, A. Gray, a genus referred to a section of *Coreopsis* in the "Genera Plantarum," but which Prof. Gray still regards as distinct.

It is to be observed that the character of the outer involucre of *C. maritima* agrees with that of *Leptogyne* as

JULY 1ST, 1876.

described by Torrey and Gray, and not with that of *Tuckermannia*.

Descr. A robust branched perennial, three to four feet high, everywhere quite glabrous. *Stems and branches* smooth, terete. *Leaves* scattered, four to ten inches long, spreading and recurved, bipinnatifid; segments lax, recurved, and divaricate, linear, acute, bright-green. *Peduncles* stout, four to eight inches long, one-headed. *Heads* golden-yellow, three to four inches in diameter, sweet-scented. *Involucre* double; outer of six to eight spreading, green, herbaceous, linear, acute bracts; inner of two series of oblong, obtuse, membranous, very appressed, coloured bracts. *Receptacle* covered with linear-lanceolate acuminate paleæ as long as the disk flowers. *Flowers* of the ray about twenty, female; corolla-tube short, limb linear-oblong, one-third of an inch broad, minutely three-toothed at the rounded tip; flowers of disk crowded; tube slender, with a ring of hairs about the middle, limb small, five-toothed. *Achenes* oblong, compressed, smooth, without a trace of pappus.—*J. D. H.*

Fig. 1, Flower of ray; 2, do. of disk; 3, palea of receptacle:—*all enlarged.*

6242.

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TAB. 6242.

TULIPA HAGERI.

Native of Greece.

Nat. Ord. LILIACEÆ.—Tribe TULIPEÆ.

Genus TULIPA, *Linn.* (*Baker in Journ. Linn. Soc.*, vol. xiv., p. 275).

TULIPA *Hageri;* bulbo ovoideo tunicis membranaceis brunneis glabris, caule glabro semipedali unifloro, foliis 4-5 viridibus glabris lineari-loratis acutis facie canaliculatis nullo modo undulatis, perianthio inodoro erecto campanulato segmentis conformibus oblongis acutis splendide coccineis basi macula rhomboidea magna atro-purpurea luteo-marginata præditis, staminibus perianthio duplo brevioribus filamentis applanatis basi penicillatis, ovario cylindrico stigmatibus parvis.

TULIPA Hageri, *Held. in Regel Gartenflora*, vol. xxiii., p. 97, tab. 790.

This is a very handsome and distinct new species. It is the first of the small group which, in the monograph of the genus above cited, I have called *Saxatiles*, which has been introduced into cultivation. These *Saxatiles* are intermediate between the old well-known *Gesnerianæ* and *Sylvestres*, combining the showy bright scarlet or crimson flowers of the first with the narrow uncrisped leaves and filaments bearded at the base of the second. By its equal acute perianth-segments and large distinctly bordered basal blotch this recalls *T. bœtica* to mind, but it has the character of leaf and stamen just mentioned, and both leaf and scape are quite free from pubescence. It was discovered by Dr. Von Heldreich in 1862 on the hills of the Parnes range in Attica, growing with *T. Orphanidea*, at an elevation of 1600 feet above sea-level, and is included in his "Herbarium Græcum Normale," no. 811. The drawing was made from a specimen presented by Mr. Elwes to the Kew collection, which was in full flower on the 24th of April of the present year, and we have also received it from the Rev. H. N. Ellacombe and Rev. H. Harpur-Crewe.

DESCR. *Bulb* ovoid, under an inch thick, with dark brown glabrous membranous tunics. *Stem* half a foot high, terete, glabrous, one-flowered. *Leaves* four or five to a stem, all springing from its lower half, erect, linear-lorate, acute, green, glabrous, not at all crisped, the lowest half a foot long by half or five-eighths of an inch broad, the others smaller. *Perianth* erect, inodorous, broadly campanulate, an inch and a quarter deep; both rows of segments alike in shape, oblong, acute, half or five-eighths of an inch broad at the middle, puberulous at the tip, deep crimson on the face, tinged with yellow on the outside, with a rhomboid purple-black blotch with a distinct yellow border occupying the whole breadth of the claw and reaching a third of the way up. *Stamens* half as long as the perianth, purple-black, the linear filament hairy at the base and rather shorter than the ligulate anther. *Ovary* clavate, shorter than the stamens, narrowed to the point, and tipped with three small stigmas.—*J. G. Baker.*

6213.

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TAB. 6243.

MORICANDIA SONCHIFOLIA.

Native of Northern China.

Nat. Ord. CRUCIFERÆ.—Tribe BRASSICEÆ.

Genus MORICANDIA, *DC.* (*Benth. et Hook. f. Gen. Plant.*, vol. i., p. 85).

MORICANDIA *sonchifolia*; erecta, ramosa, glabra, foliis sessilibus basi auriculatis, radicalibus lyrato-pinnatisectis segmentis sinuato-dentatis, caulinis obovato-oblongis v. panduræformibus subacutis, floribus racemosis violaceis ebracteatis gracile pedicellatis, sepalis erectis coloratis lateralibus basi saccatis, petalis amplis patulis longe unguiculatis lamina late obovata, siliquis longissimis angustis obtuse 4-gonis, valvis carinatis, septo membranaceo foveolato, stylo gracili elongato, stigmatibus in conum conniventibus, seminibus 1-seriatis

ORYCHOPHRAGMUS sonchifolius, *Bunge, Enum. Plant Chin. Bor.*, p. 7; *Walp. Rep.*, vol. i., p. 187.

This very showy Crucifer, though described as long ago as 1832, has hitherto been known only from dried specimens collected by its discoverer, the veteran traveller and botanist, Professor Bunge, of Dorpat, who accompanied a Russian mission to Pekin from Siberia in 1831. It is a hardy annual, remarkable for the bright colour and delicacy of its corolla, and being easy of cultivation is likely to become as great an acquisition as its near ally, the old garden favourite, the European *M. arvensis* (Tab. nost. 3007), which has been in cultivation since 1739. Another species is the beautiful *M. Ramburii* (Tab. nost. 4947), a native of Spain. When describing the *Cruciferæ* for the "Genera Plantarum" I had only imperfect specimens of *Orychophragmus*, and I retained the genus as defined by Bunge; with the more complete materials now before me I have no hesitation in replacing it in *Moricandia*, to which genus, indeed, Bunge had in the first instance referred *O. sonchifolia*.

The Royal Gardens are indebted to Dr. Playfair, late medical officer attached to the Embassy at Pekin, for seeds of this plant, which flowered in March of the present year.

DESCR. A slender, branched, glabrous, leafy annual, one

JULY 1ST, 1876.

to two feet high. *Leaves* sessile, acutely auricled at the base; radical early withering, lyrately-pinnatisect; terminal lobe cordate, lateral lobes in four to five pairs, small, sessile, all sinuate-toothed; cauline leaves obovate-oblong or panduræform, subacute, sinuate-toothed. *Flowers* one and a quarter inch in diameter, in lax terminal racemes, pale violet-blue, or slender ebracteate pedicels. *Calyx* three-quarters of an inch long; sepals coloured, the two lateral saccate at the base. *Petals* with claws as long as the sepals; blade orbicular-obovate, spreading. *Anthers* linear, yellow. *Pod* three to four inches long, obtusely four-angled, narrow, nearly straight; valves keeled, slender; septum membranous, perforated; style slender, subulate; stigmas combined into a conical tip. *Seeds* one-seriate, small, oblong, in one row; cotyledons conduplicate.—*J. D. H.*

Fig. 1, Stamens and pistil; 2, pod; 3, seeds; 4, seed:—*all but f.* 3 *enlarged.*

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BOTANICAL MAGAZINE.

CONTENTS OF No. 379, JULY, 1876.

Tab. 6239.—COSMIBUENA OBTUSIFOLIA, var. LATIFOLIA.
„ 6240.—PESCATORIA LAMELLOSA.
„ 6241.—COREOPSIS (TUCKERMANNIA) MARITIMA.
„ 6242.—TULIPA HAGERI.
„ 6243.—MORICANDIA SONCHIFOLIA.

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VII. British Colonisation and Rule.
VIII. Social Progress and Prospects.

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PLATE
1. *Frontispiece.* View on the Palmiet River, near Westville.
2. Physical and Topographical Map of the Colony.
3. Plan of the Inner Bay or Harbour.
4. Sandstone Wall on the shoulder of Pietermaritzburg Table Mountain.
5. Mines at the Diamond Fields on the Vaal River.
6. The Valley of the Umgeni from Table Mountain.
7. The Lower Falls of the Umgeni.
8. Great Fall of the Umgeni at Howick.
9. Glade at Aliceville, with Wild Bananas and Date-palms.
10. Euphorbia Caput-Medusæ.
11. Arduinia grandiflora—Amatungulu.
12. Scarlet Cyrtanthus—Flame-lily.
13. Thunbergia Natalita.
14. Portrait of Langalibalele, Chief of the Amahlubi Kaffirs.
15. Mission on the Hills near Verulam.
16. Kranzkop; overlooking the Tugela Valley.

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6244.

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TAB. 6244.

BONGARDIA RAUWOLFII.

Native of Western Asia.

Nat. Ord. BERBERIDEÆ.—Tribe BERBEREÆ.

Genus BONGARDIA, *C. A. Meyer* (*Benth. et Hook. f. Gen. Plant.* vol. i. p. 43).

BONGARDIA *Rauwolfii*: acaulis glaberrima, glaucescens, rhizomate tuberoso, foliis longe petiolatis omnibus radicalibus patentibus impari-pinnatisectis, foliolis oppositis 3–4-nisve 3–8-jugis obovatis v. obcuneatis 3-rarius 5-lobis, lobis acutis v. obtusis, scapis crasiusculis paniculatim ramosis multifloris, bracteis oblongis obtusis, floribus aureis, sepalis 3 exterioribus brevibus orbiculatis viridibus, petalis interioribus obovato-obcuneatis crenato-dentatis.

B. Rauwolfii, *C. A. Meyer, Verz. Pfl. Cauc.* p. 174; *Walp. Rep.* vol. i. p. 100; *Ledeb. Fl. Ross.* vol. i. p. 80; *Floral Cabinet*, vol. iii. t. 98; *Henslow in Botanist*, vol. i. t. 50; *Hook. f. et Thoms. Fl. Ind.* vol. i. p. 230.

B. Olivieri, *C. A. Meyer*, l. c.

B. Chrysogonum, *Spach, Hist. Plant. Phan.* vol. viii. p. 65; *Griseb. Fl. Rumel.* vol. i. p. 291; *Jaub. et Spach, Ill. Pl. Orient.* t. 396; *Bois. Fl. Orient.* vol. i. p. 99.

CHRYSOGONUM Dioscoridis, *Rauwolf, Itin.* p. 119, cum Ic.

LEONTICE Chrysogonum, *Linn. Hort. Cliff.* p. 122; *Willd. Sp. Pl.* vol. iii. t. 148; *DC. Prod.* vol. i. p. 109; *Ait. Hort. Kew*, ed. 2, vol. ii., p. 272.

This singular plant, a herbaceous Barberry it may be called, has on several occasions been introduced into cultivation in England, but never been kept long. Aiton, in the 'Hortus Kewensis,' mentions it as having been introduced from the Levant before 1740, long before which, in 1573, it was described by Rauwolf as the true Chrysogonum of Dioscorides, in a chapter of his travels devoted to "A short and plain "narration of plants which I gathered during my stay at "Halepo, in and around about it, not without great trouble "and danger, which I glued upon paper very carefully." (*Ray.*)

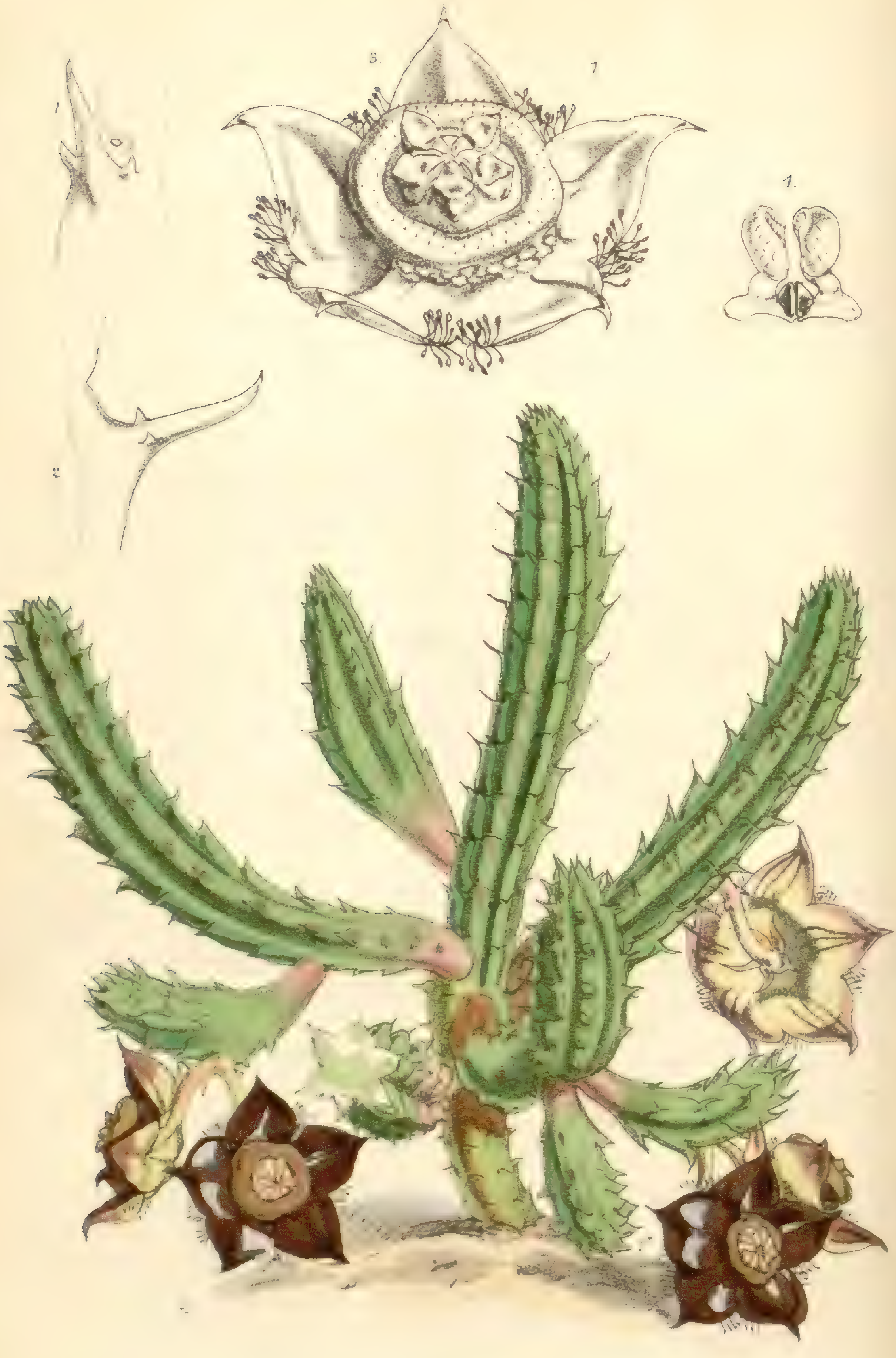
Bongardia Rauwolfii has a very wide range in geographical distribution, from the islands of the Greek Archipelago (Chios and Rhodes), through Asia Minor, Syria, and Persia, to Affghanistan and Beluchistan. In Syria and Persia it is said to be found in cornfields and to be used as an acid pot-herb.

Plants of it have been received at Kew from Max Leichtlin, of Carlsruhe; and from N. Elwes, Esq., the latter of which flowered in the spring of the present year in the open border.

DESCR. Quite glabrous. *Rootstock* a depressed subterranean sphere, from the size of a nut to a small apple, pale yellow-brown, with stout root-fibres from the periphery. *Leaves* 4–10 inches long, all radical, spreading and recurved, pinnate, rachis slender; pinnules 3–8 pair, opposite, or ternate or whorled (from the fission of one or more of each pair), very variable in size and form, 1–1½ inch long, sessile, obcuneate or oblong, trifid rarely entire; lobes acute or obtuse, base rounded or wedge-shaped, green and often red-purple towards the base. *Scape* stout, 4–10 inches high, paniculately branched; bracts oblong, obtuse, deciduous, pedicels curved. *Flowers* drooping, ¾–1 inch in diameter; *outer sepals* 3, nearly orbicular, greenish bordered with pink; *inner* and *petals* very much larger, obcuneate-obovate, crenate, golden-yellow. *Filaments* short; anthers linear-oblong, with linear recurved valves. *Ovary* ovoid, wrinkled; style very short; stigma peltate, lobed; ovules 5–6, inclined on long, stout, curved, basal funicles. *Capsule* bladdery, several-seeded.—*J.D.H.*

Fig. 1. Petal; 2. stamen; 3, outer sepals, disk, and ovary; 4, vertical section of ovary:—*all enlarged.*

6245



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TAB. 6245.

DUVALIA POLITA.

Native of South Africa.

Nat. Ord. ASCLEPIADEÆ.—Tribe STAPELIEÆ.

Genus DUVALIA, *Haw.* (*Synops. Pl. Succ.* p. 44,—*Benth. and Hook. f. Gen. Plant.* vol. ii. p 784).

DUVALIA *polita*; humilis, glabra, caulibus ramisque decumbentibus radicantibus elongato-clavatis 6-angulatis, angulis obtusis dentatis, dentibus longis subulatis patentibus, utrinque basi denticula parva præditis, floribus aggregatis circiter 3–4 e mediis summisve ramulis, pedicellis pollicaribus, sepalis subulatis glabris, corolla diametro pollicari fusco-purpurea nitidissima lobis ovatis acuminatis erecto-patentibus apice recurvatis, marginibus parum replicatis basi pilis longis clavatis purpureis fimbriatis, faucis annulo minutissime scabro pallidiore, corona exteriore sordide rubro-purpurea. interiore sordide aurantiaca:

Duvalia polita, *N. E. Brown, in 'Gardeners' Chronicle,'* 1876, vol. vi. p. 130.

The plant here figured and described is one which flowered in the Royal Gardens, Kew, in the summer of 1874 and is now coming into flower again. Its history and the precise locality from which it came are unknown, although not uncommonly cultivated by Stapelia growers under the names *Stapelia polita* and *S. echinata.* With the exception of *Duvalia Corderoyi* (Tab. nos. t. 6082) it is the finest of the genus, and is remarkable on account of its regularly 6-angled stems and very shining corolla, the lobes of which are less replicate than those of any other species in the genus.

DESCR. *Stems and branches* elongate, 2–3 inches long, about ½ in. thick, somewhat clavate, especially when young, more or less decumbent and rooting, (not so erect as in the figure), glabrous, dull green or purplish, 6-angled; angles obtuse, toothed; teeth long and spreading, subulate, furnished at their base with a minute tooth on each side. *Flowers* 3–4 together, opening successively; pedicels about 1 inch long, glabrous, purplish. *Calyx-lobes* subulate, ¼ inch long, glabrous, dull green. *Corolla* 1 inch in diameter;

lobes ovate-acuminate, erect-spreading, a little recurved at the apex, brownish-purple, very smooth and polished, the margins very slightly folded back and fringed towards their base with long, vibratile, clavate, purple hairs; annulus (orb) very minutely scabrid, a little paler than the lobes (but not so pale as in the figure), and opaque. *Outer corona* chocolate-red or dark purplish-red; processes of inner corona dull orange. *Pollen-masses* dull yellowish. *N. E. Brown.*

Fig. 1 and 2, Teeth on angles of branches; 3, flower; 4, pollen-masses: *all magnified.*

6246.

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TAB. 6246.

EULOPHIA MACROSTACHYA.

Native of Ceylon.

Nat. Ord. ORCHIDEÆ.—Tribe VANDEÆ.

Genus EULOPHIA, *Lindl.* (*Gen. et Sp. Orchid.* p. 18.)

EULOPHIA *macrostachya*; pseudobulbis elongatis articulatis sulcatis, foliis oblongo-lanceolatis acuminatis plicatis subtricostatis, scapo simplici radicali foliis longiore, vaginis elongatis appressis, racemo stricto multifloro, bracteis subulatis, sepalis lineari-lanceolatis acuminatis viridibus, lateralibus patentibus, dorsali fornicato, petalis sepalo dorsali consimilibus porrectis, labello latiore quam longo aureo rubro striato obtuse 3-lobo, lobis recurvis lateralibus brevibus intermedio e basi lata oblongo apice rotundato, disco basi 2-lamellato, calcare brevi subgloboso 2-lobo, columni brevi.

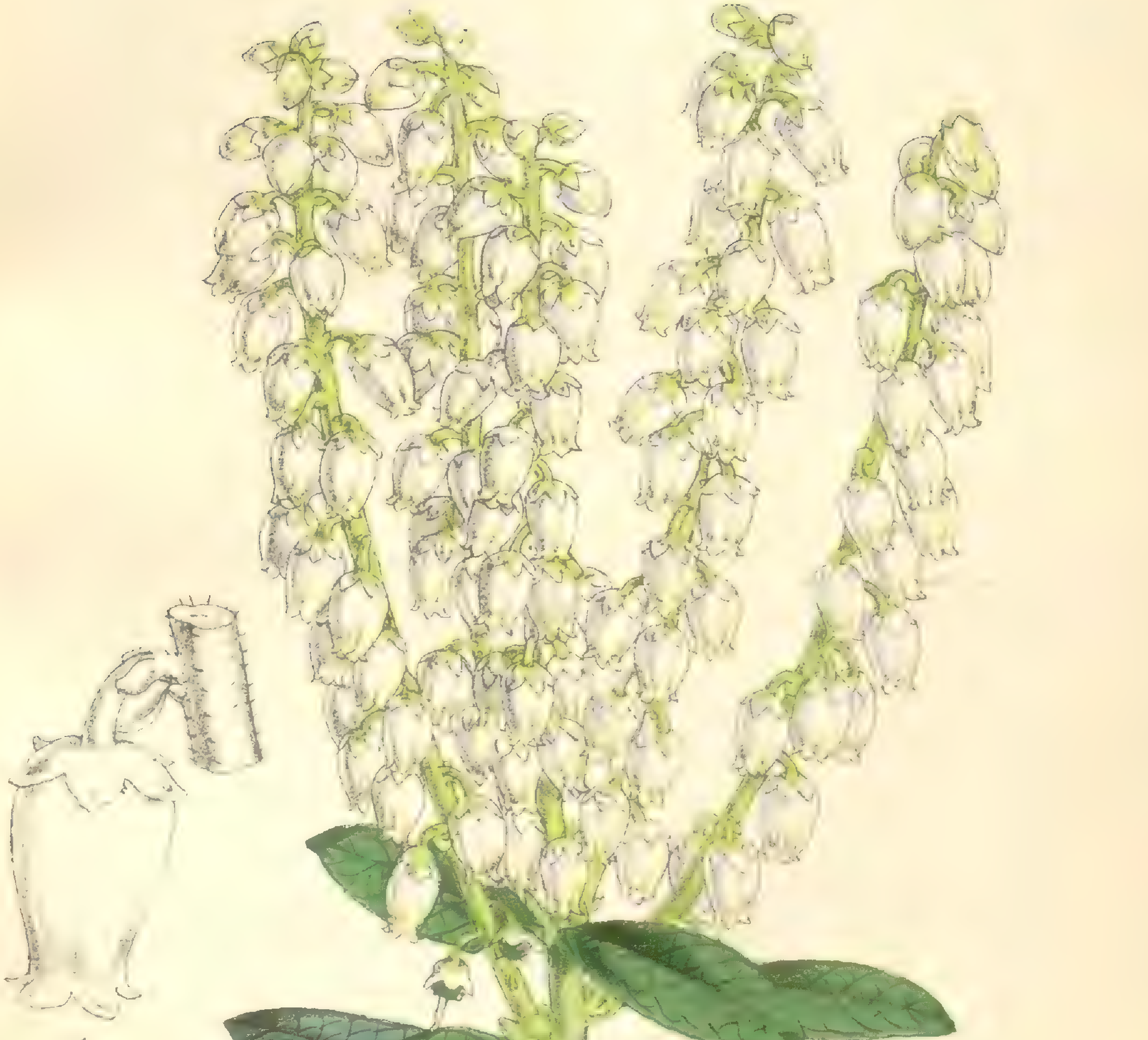
E. macrostachya, *Lindl. Gen. et Sp. Orchid.* p. 183; *Bot. Reg.* t. 1972; *Wight, Ic. Pl. Ind. Or.* t. 1667–8; *Thwaites Enum. Pl. Zeyl.*, p. 301; *Walp. Ann.* vol. vi. p. 646.

A very graceful Orchid, introduced into the Horticultural Gardens from those of Peradenia by Mr. Watson, their then superintendent, so long ago as 1837, and more recently sent to England by Dr. Thwaites, from whose specimens cultivated at Kew the drawing now reproduced was made in 1860, and who states that it is not uncommon in the central province of the island, ascending to 4000 ft. It is also, according to Wight, a native of the eastern slopes of the Neilgherry Mountains. Lindley describes it as one of the easiest-grown of Orchids, flowering late, and producing fresh flowers till Christmas; ours bloomed first in January, 1864.

DESCR. *Pseudobulbs* 3 to 5 inches long, elongate conical, terete, striated, formed of 3–6 superposed green cylindric joints, the basal sending down very thick cylindric roots. *Leaves* about 2 from the top of the pseudobulb, 6–10 inches long, oblong-lanceolate, acuminate, contracted into a petiole, membraneous, plaited, about 3-ribbed. *Scape* springing from the side of the base of the pseudobulb, 1–1½ feet high, strict, erect, red-brown, with two or three cylindric appressed obtuse sheaths. *Raceme* 4–8 inches long, many-flowered, strict, erect; bracts subulate. *Flowers* shortly pedicelled, about an inch in diameter across the lateral sepals, erecto-patent. *Sepals* green, upper lanceolate, acuminate, arched, lateral rather broader spreading. *Petals* like the dorsal sepal, arched and projecting forward. *Lip* very concave, golden-yellow with red-purple stripes on the disk, broader than long, obtusely shallowly 3-lobed; lobes all recurved, lateral rounded, terminal shortly oblong, rounded at the end; disk with 2 small bracts; spur globose, 2-lobed, green. *Column* short.—*J. D. H.*

Fig. 1, Side, and 2, front view of flower; 3, lip; 4, column:—*all enlarged.*

6247.



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TAB. 6247.

LEUCOTHOE DAVISIÆ.

Native of California.

Nat. Ord. ERICACEÆ.—Tribe ANDROMEDEÆ.

Genus LEUCOTHOE, *Don.* (*Benth et Hook. fil. Gen. Plant.* vol. ii., p. 584).

LEUCOTHOE *Davisiæ;* frutex subglaber sempervirens, foliis breviter petiolatis oblongis coriaceis nitidis viridibus obscure serratis subacutis vel obtusis, racemis subsessilibus erectis numerosis axillaribus terminalibusque, pedicellis flore brevioribus floriferis cernuis fructiferis ascendentibus, bracteis minutis oblongis scariosis, bracteolis lanceolatis, calycis segmentis lanceolatis persistentibus basi brevissime coalitis, corollæ urceolatæ albæ dentibus parvis patulis deltoideis, genitalibus inclusis, capsulis membranaceis depresso-globosis, seminibus turgidis asperis.

LEUCOTHOE Davisiæ, *Torrey; A. Gray in Proc. Amer. Acad.* vol. vii. p. 400; *Bot. Calif.* vol. i. p. 455.

L. Lobbii, *Hook. MSS.*

This handsome evergreen ericaceous shrub was discovered in 1853, by Mr. William Lobb, on the Sierra Nevada Mountains of California, at an elevation of 5000 feet. It was sent by him to Messrs. Veitch, and distributed by them under the name of *Leucothoe Lobbii.* It was gathered again in the same tract by Miss N. J. Davis, after whom it was named by Dr. Torrey, and this name has been adopted by Dr. Asa Gray in the proceedings of the American Academy, and in the valuable work on the botany of California, of which we have just received the first volume. It is the only species of the genus which has been found on the western side of the American continent. From the two well-known and long-cultivated species of the Eastern States (*L. axillaris* and *Catesbæi*), it differs by its shorter nearly entire much less pointed leaves, and by having its larger and handsomer flowers aggregated into a panicle at the end of the branches. So that, horticulturally, it is a decidedly finer plant, and of course, coming from such an elevation, it may be safely relied upon as quite hardy.

DESCR. A close-growing shrub, nearly glabrous in all its parts. *Leaves* oblong, coriaceous, bright green, subacute or obtuse, rather rounded at the base, obscurely serrated, $1\frac{1}{2}$–$2\frac{1}{2}$ inches long, paler on the under side, and reticulated with the raised veins and veinlets; petiole $\frac{1}{4}$–$\frac{3}{8}$ in. long, channelled down the face. *Flowers* in nearly sessile, rather close erect racemes 3–4 inches long, from the axils of the upper leaves and end of the branches above the leaves, so that they form a close terminal panicles; pedicel $\frac{1}{8}$–$\frac{1}{6}$ in. long, cernuous in the flowering, ascending in the fruiting stage; bracts minute, oblong, scariose, enclosing a couple of smaller lanceolate bracteoles of the same texture, placed near the base of the pedicel. *Calyx* broadly campanulate, scariose, persistent, the five lanceolate segments joined only at the very base. *Corolla* white, urceolate, $\frac{1}{4}$ in. long, with five spreading deltoid teeth. *Stamens* included within the corolla; anther-cells bifid at the tip, where they open by a large pore. *Ovary* depresso-globose. *Style* entire, with an obscurely 5-lobed capitate stigma. *Capsule* small, umbilicate, depresso-globose, membranous. *Seed* turgid, with a loose rough testa,

J. G. Baker.

Fig. 1, Portion of rachis of a raceme, with a pendulous flower; 2, flower, with corolla taken away; 3, a single stamen:—*all magnified.*

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TAB. 6248.

AGAVE BOTTERII.

Native of Mexico.

Nat. Ord. AMARYLLIDACEÆ.—Tribe AGAVEÆ, *Linn.*
AGAVE, (*Jacobi in Hamburg Gartenzeitung*, vols. xx *et seq.*)

AGAVE (*Littæa*) *Botterii*; acaulis, foliis 40–50 oblongo v. oblanceolato-spathulatis coriaceo-carnosis pallide vix glauco-viridibus medio poll. crassis facie concavis, apice in spinam atram pungentem productis margine dentibus deltoideis corneis fusco-nigris crebris antrorsum falcatis armatis, scapo robusto 4-pedali, floribus geminis in spicam magnam cylindricam confertis, bracteis lanceolatis cuspidatis, bracteolis lanceolatis parvis, perianthio viridulo infundibulari bi-pollicari tubo ovario breviore, segmentis oblongo-lanceolatis diu ascendentibus, genitalibus perianthio subduplo longioribus.

This plant was sent a long time ago from Mexico by M. Botteri to Mr. Wilson Saunders, and I knew it for many years in the Reigate collection. When this was dispersed it was purchased by Mr. J. T. Peacock, with whom it flowered, at Sudbury House, Hammersmith, in the spring of 1875. I have not been able to refer it to any of the species described in the elaborate monograph of the late General Von Jacobi. It is a *Littæa* as regards inflorescence, and, according to his classification, founded on characters, falls into the group "Subcoriaceæ," which combines the small teeth of the "Aloideæ," with a much thinner leaf, with the firmer texture of the large-spined panicled species of the series of which *A. americana* and *Scolymus* are best known representatives. Its nearest neighbours are *A. densiflora*, Hook. in Bot. Mag., t. 5006, the plant called *A. Keratto*, by Salmdyck and Jacobi (which is not the original *Keratto* of Miller), and *A. xalapensis*, Roezl; Jacobi Monog., 72, which I cannot distinguish from *A. polyacantha* "Haworth," K. Koch; but in all these the leaves are at least five or six times as long as broad, oblanceolate, not oblanceolate-oblong.

DESCR. *Leaves* 40–50 in a sessile rosette, oblanceolate- or oblong-spathulate, two feet long, six to eight inches broad above the middle, narrowed gradually to a pungent dark-coloured channelled spine half an inch long, and downwards to a breadth of 4–5 inches above the dilated base, one eighth of an inch thick in the centre, rigidly coriaceous in texture, concave on the face, pale green and hardly at all glaucous when mature, the margin armed with close deltoid upcurved horny teeth about one eighth of an inch long. *Scape* stout, twice as long as the leaves, hidden by the adpressed linear bract-like leaves. *Inflorescence* a dense spike, longer than the leaves; flowers in pairs; primary bracts lanceolate, with a long cusp; bracteoles small, lanceolate. *Ovary* oblong. *Perianth* green, funnel-shaped, two inches long, with a distinct funnel-shaped tube half an inch long; segments oblong-lanceolate, permanently ascending, nearly an inch long. *Stamens* inserted near the throat of the tube; filaments subulate two and a half inches long; anthers red, an inch long. *Style* three and a half inches long, stigma capitate.

J. G. Baker.

Fig. 1. The whole plant, *much reduced;* 2, a single leaf, *much reduced;* 3, portion of the edge of the leaf, with teeth, *natural size;* 4, pair of flowers, with bract and bracteoles, *natural size.*

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TAB. 6249.

GAMOLEPIS EURYOPOIDES.

Native of South Africa.

Nat. Ord. COMPOSITÆ.—Tribe SENECIONIDEÆ.

GAMOLEPIS, *Less.* (*Benth et Hook. Gen. Pl.* vol. ii. p. 452.)

GAMOLEPIS *euryopoides;* fructicosa, erecta, glaberrima ramis foliosis, foliis confertis patulis breviter petiolatis ad medium v. infra 3-fidis, lobis linearibus subacutis, pedunculis gracilibus pedunculis bis-terve longioribus, capitulis 1–1½ poll. diam., involucri hemispherici bracteis 1-seriatis fere liberis late oblongis subacutis, fl. radii ad 8–10 ligulis oblongis, acheniis lineari-obovoideis multicostatis glaberrimis.

G. euryopoides, *DC. Prod.* vol. vi. p. 41; *Harv. et Sond. Fl. Cap.* vol. iii. p. 157.

Gamolepis is a South African genus of Compositæ, numbering about twelve species, of which none but that now figured have hitherto been known to be in cultivation. Most of them are shrubby perennials suited for greenhouse culture; and a few are of very singular habit, resembling in their foliage heaths, lycopods, and mosses. The *G. polytrichoides* is the most remarkable of these; it is a very slender branched shrub, whose branches are uniformly clothed with crowded spreading and recurved needle-shaped leaves, and bear at their tips a capillary pedicel terminated by a minute flower; the resemblance of the plant to a gigantic moss is almost deceptive; it is a native of grassy places near Grahamstown and is well worth introducing into England.

The genus Gamolepis was placed in Anthemideæ previous to Bentham's revision of the Order for the 'Genera Plantarum,' by whom it is rightly placed in *Senecionideæ* and near to Senecio itself, from which it differs in the absence of pappus; its nearest ally is *Euryops*, after which the present species is named.

G. euryopoides is a native of the mountains of British Caffraria, Uitenhage, and Albany, at about 2000 ft. elevation; it was raised at Kew from seed sent by Mr. Tuck, of the Grahamstown Botanic Gardens, in 1868, and flowers annually on the Cape shelf of the temperate-house.

DESCR. An erect quite glabrous branched shrub from one to two feet high: branches erect, leafy. *Leaves* crowded, about an inch long, spreading, trifid to about the middle, contracted below the narrow subacute linear lobes into a narrow petiole-like blade; lobes 2-nerved, rather fleshy. *Peduncles* terminal, very slender, two to four times as long as the leaves. *Heads* an inch and upwards in diameter, bright-yellow. *Involucre* hemispherical, of one row of about 8–10 oblong subacute green bracts, that are nearly free. *Ray flowers* about 8–10, female; tube short, very narrowly oblong, minutely 3-toothed at the tip. *Disk* flowers short, tube campanulate above, with 5 spreading and recurved lobes. *Achenes* linear-oblong, closely many-ribbed, quite glabrous.

Fig. 1, Ray- ; and 2, disk-flowers :—*both enlarged.*

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CONTENTS OF No. 380. AUGUST, 1876.

TAB. 6244.—BONGARDIA RAUWOLFII.
,, 6245.—DUVALIA POLITA.
,, 6246.—EULOPHIA MACROSTACHYA.
,, 6247.—LEUCOTHOE DAVISIÆ.
,, 6248.—AGAVE BOTTERII.
,, 6249.—GAMOLEPIS EURYOPOIDES.

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PLATE
1. *Frontispiece.* View on the Palmiet River, near Westville.
2. Physical and Topographical Map of the Colony.
3. Plan of the Inner Bay or Harbour.
4. Sandstone Wall on the shoulder of Pietermaritzburg Table Mountain.
5. Mines at the Diamond Fields on the Vaal River.
6. The Valley of the Umgeni from Table Mountain.
7. The Lower Falls of the Umgeni.
8. Great Fall of the Umgeni at Howick.
9. Glade at Aliceville, with Wild Bananas and Date-palms.
10. Euphorbia Caput-Medusæ.
11. Arduinia grandiflora—Amatungulu.
12. Scarlet Cyrtanthus—Flame-lily.
13. Thunbergia Natalita.
14. Portrait of Langalibalele, Chief of the Amahlubi Kaffirs.
15. Mission on the Hills near Verulam.
16. Kranzkop; overlooking the Tugela Valley.

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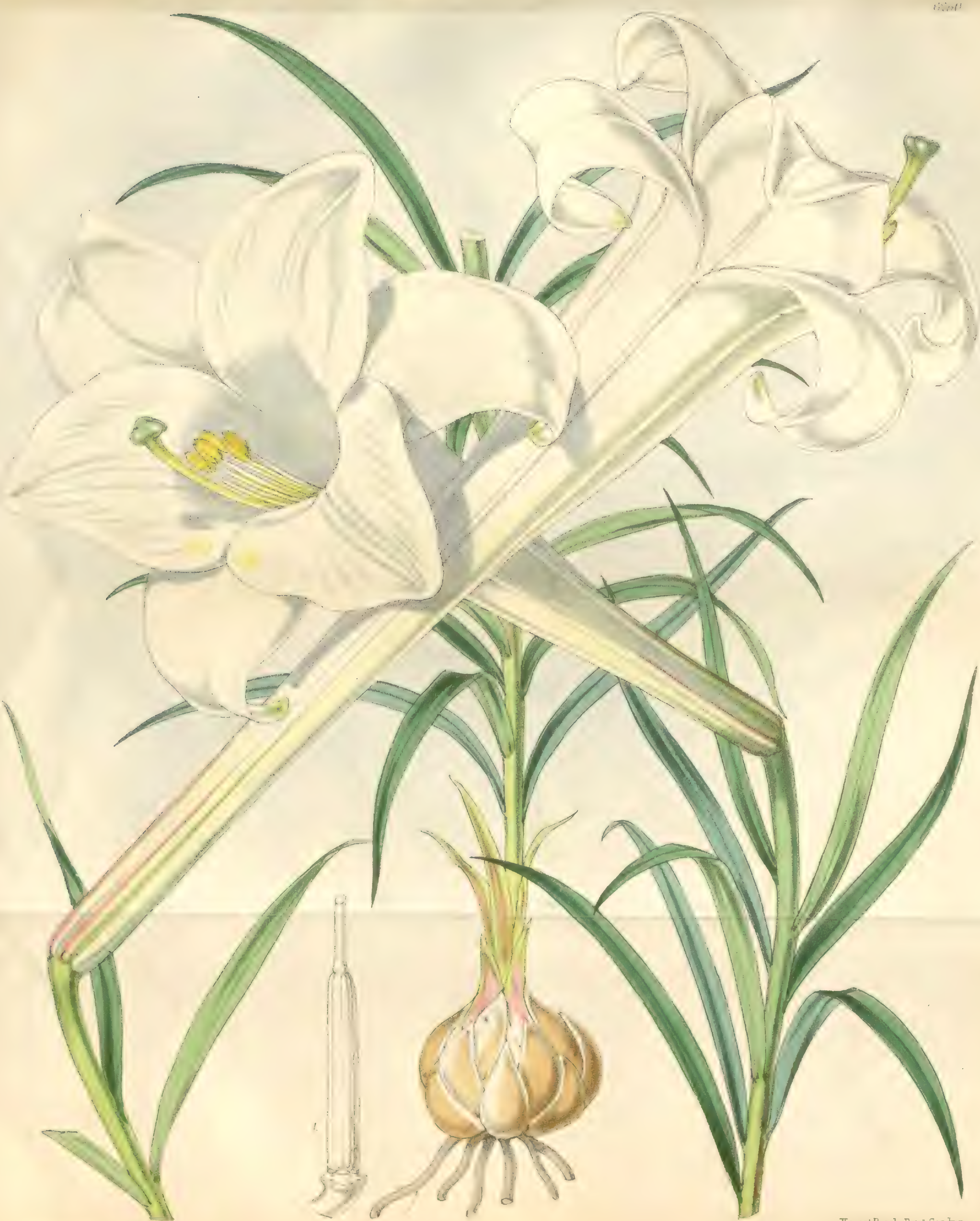

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Tab. 6250.

LILIUM PHILLIPINENSE.

Native of the Philippine Islands.

Nat. Ord. Liliaceæ.—Tribe tulipeæ.

Genus Lilium, *Linn.* (*Baker in Journ. Linn. Soc.* vol. xiv. p. 225).

Lilium (Eulirion) *philippinense*: bulbo subgloboso. squamis magnis lanceolatis. caule gracili tereti glabro sesquipedali vel bipedali unifloro. foliis 30–40 sparsis laxe dispositis anguste linearibus acutis uninerviis viridibus glabris erecto-patentibus margine revolutis. perianthii albi horizontalis suaveolentis segmentis oblanceolatis supra medium in tubum anguste infundibularem diu imbricatis, quarto superiori latioribus flore expanso falcatis, interioribus latioribus, staminibus ex tubo protrusis. antheris parvis oblongis. polline luteo. ovario cylindrico, stylo stamina superante apice stigmatoso profunde trilobato.

L. philippinense, *Baker in Gard. Chron.* 1873, p. 114. fig. 243; *Journ. Linn. Soc.* vol. xiv. p. 228.

This fine plant comes very near *L. longiflorum*, Thunb, of Japan and China, and may prove to be an extreme variety of that species. The characters mainly relied upon to distinguish it are the very narrow one-nerved leaves and extravagantly elongated tube formed by the permanently imbricated claws of the perianth segments, in which, as in its allies, only the distinctly-raised keel of the inner divisions is visible. It is a native of the Phillippines and was sent by Mr. Wallis to Messrs. Veitch, and first flowered by them in August, 1873. Whether it will prove hardy still remains to be seen, but the mountains in the Philippines are said to reach a height of ten thousand feet. Botanically it is interesting as showing the extreme development of the peculiarities that mark the "*Eulirion*" group.

Descr. *Bulb* subglobose, perennial, with large lanceolate scales. *Stem* one and a half to two feet high, slender, terete, glabrous, plain green or slightly mottled with purple. *Leaves* thirty or forty, scattered laxly all down the stem from within a short distance of the solitary flower to the base, narrow linear, sessile, falcate-ascending, three to four inches long, one-eighth to one-sixth inch broad at the middle, acute, bright green, glabrous, with only the midvein distinct, the edges narrowly decurved, and not at all ciliated. *Flower* solitary horizontal, permanently funnel-shaped, pure white with only a tinge of green on the outside near the base, sweet-scented, seven to ten inches long, the divisions remaining permanently imbricated in the lower three-quarters, spreading falcately in the upper quarter, the three inner about two inches, and the three outer an inch and a half broad. *Stamens* a little exserted from the tube; anthers oblong, one fourth of an inch long; pollen yellow. *Ovary* cylindrical; style declinate, overtopping the filaments, deeply three-lobed at the stigmatose tip.—*J. G. Baker.*

Fig. 1. Ovary and base of style, *natural size.*

6251.

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TAB. 6251.

LYCASTE LASIOGLOSSA.

Native of Guatemala.

Nat. Ord. ORCHIDEÆ.—Tribe VANDEÆ.

Genus LYCASTE, *Lindl.* (*Bot. Reg.*, 1843; *Misc.* p. 14).

LYCASTE *lasioglossa*; pseudobulbis ovoideis compressis, foliis membranaceis elliptico-lanceolatis acuminatis plicatis, scapo viridi supra medium-vaginato, vagina viridi acuminata, bractea ovario breviore virescente obtusa, sepalis patentibus anguste oblongis acutis pallide testaceis lateralibus ima basi araneoso-pilosis, petalis sepalis ter brevioribus oblongis obtusis fornicatis aureis apicibus recurvis, labello petalis æquilongo aureo purpureo-punctato lobis lateralibus angustis obliquis obtusis, mento brevissimo, intermedio oblongo-ligulato obtuse dense hirsuto, disco callo inter lobis laterale triangulari, ovato apice obtuso 2-denticulato, columna elongata gracili aptera.

L. lasioglossa, *Reichb. f. in Gard. Chron.* 1872, p. 215.

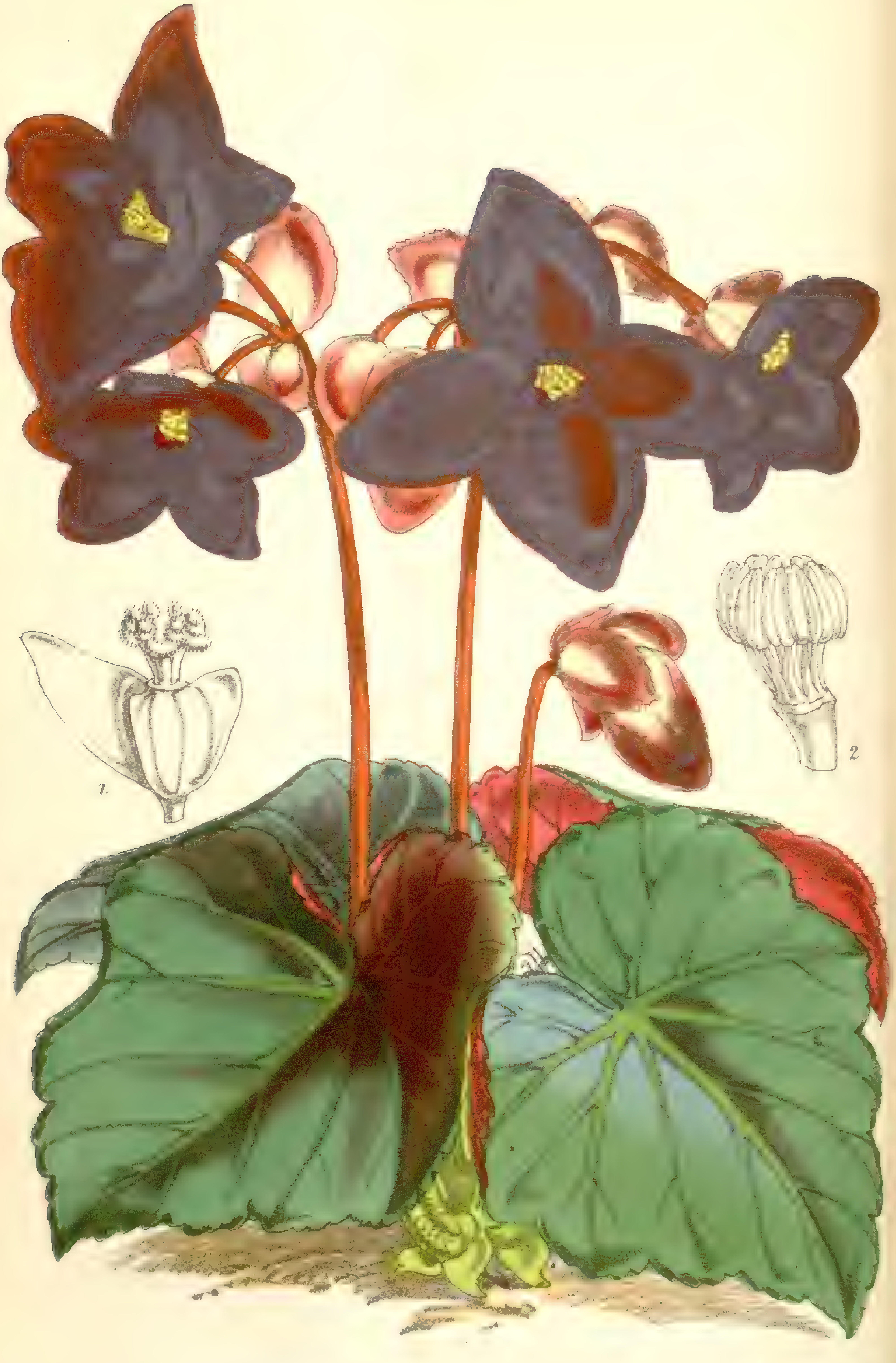
Prof. Reichenbach remarks of this species that it looks as if intermediate between *L. Schillereana* and *L. macrophylla*, having the general aspect of the last, and the short petals of the first, but differing totally from both in the peculiar lip, the bearded middle lobe of which is quite a novel feature in the genus.

Lycaste was established by Lindley, 1843, to include nine orchids, of which most had previously been placed in *Maxillaria*, but which differ from that genus in the great dissimilarity between the sepals and petals. The name is, however, introduced by the author in the previous year's volume (1842, Misc. No. 96), without description or an allusion to its being then used for the first time. In 1861, the number of species is increased to twenty-four, according to Reichenbach's enumeration in Walper's Annalen (vol. vi. p. 600), of which number comparatively few are figured in Horticultural works, the genus being no great favourite amongst orchid growers.

Lycaste lasioglossa, so named from the hairy lip, is a native of Guatemala, from whence it was imported by Messrs. Veitch, to whom I am indebted for the opportunity of figuring it.

Descr. *Pseudobulbs* three inches long, ovoid, compressed, grooved, green. *Leaves* 8–12 inches long, elliptic-lanceolate, acuminate, plaited, narrowed into a broad petiole, bright green. *Scape* stout, with an erect herbaceous acuminate sheath above the middle. *Bract* shorter than the ovary, appressed, obtuse. *Flower* five inches long from the tip of the dorsal to that of either lateral sepal, inclined. *Sepals* spreading, narrow oblong, subacute, rather dull cinnamon-brown, hairy at the base within, margins recurved. *Petals* about one-third the length of the sepals, arched, concave with rounded spreading tips, golden-yellow. *Lip* about equalling the sepals, narrow, golden-yellow with purple specks on the midlobe; lateral lobes narrow, short, obtuse, ciliate, recurved; midlobe oblong, obtuse, clothed in the upper surface with long soft interlaced hairs; callus in the disk ovate, pointing forward, minutely notched at the tip. *Column* slender, margins not winged.—*J. D. H.*

Fig. 1, Column; 2, lip:—*both enlarged.*



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Tab. 6252.

BEGONIA Davisii.

Native of Peru.

Nat. Ord. Begoniaceæ.

Genus Begonia, *Linn.* (*Benth. and Hook. f. Gen. Plant.* vol. i. p. 841).

Begonia (*Huszia*) *Davisii*; herbacea, acaulis, radice tuberoso, foliis oblique ovato-cordatis subacutis supra nitidis pilosis pilis sparsis erectis rigidis marginibus leviter lobulatis crenulatisque, nervis basi radiantibus, costa penninervi, petiolo brevi robusto hirsuto, scapis folia excedentibus apice 3-floris rubris, bracteis late ovatis membranaceis ciliatis coccineis, floribus longiuscule pedicellatis, tetrapetalis coccineis ♂ majoribus, petalis 2 exterioribus late ovatis, interioribus oblongis latioribus, staminibus 8–10 brevibus declinatis, antheris oblongis filamenta æquantibus, fl. ♀ ovario 3-ptero, alis lateralibus brevibus angulis obtusis, dorsali elongato-triangulari acuta, stylis 3, stigmatibus brevibus hippocrepiformibus, placenta bifida.

B. Davisii, *Hort. Veitch.*

The Andean Begonias of the group to which *B. Veitchii*, (tab. 5663), *B. rosæflor* (tab. 5680, and *B. Clarkei*, tab. 5675), though all discovered within the last ten or twelve years, have already with their hybrids (*inter se* and with others) become the most brilliant ornaments of the conservatory and rock-garden. To these must now be added the subject of the present plate, which, from its compact habit and brilliant colouring, will probably eclipse the others. It was discovered in Peru, near Chupe, at an elevation of 10,000 feet, by Mr. Davis when collecting for Messrs. Veitch, and it flowered in their establishment in July of the present year.

Under *B. Veitchii* (tab. 5663) I stated my expectation that it would in all probability prove hardy in the South-West of England, it having withstood a temperature of 25° Fahr. in Mr. Veitch's gardens; neither it, however, nor its allies have proved capable of withstanding the combined effects of cold and damp on the rock-garden at Kew, where, after flowering superbly during the summer months, they disappeared before the following spring. As *B. Davisii* inhabits the same county and elevation as *B. Veitchii*, it may be expected to be tender. There is fortunately no difficulty in housing the tuberous rooted Begonias of this class during winter; their summer growth is always vigorous and rapid; and they are profuse bloomers.

Descr. Stemless. *Root* tuberous. *Leaves* all radical, spreading, broadly obliquely ovate-cordate, or almost orbicular, subacute, glossy above, and furnished with stiff erect scattered hairs, more glabrous and red beneath, margins shallowly lobulate and crenulate, basal nerves radiating from the top of the petiole, midrib penninerved; petiole short, stout, hirsute. *Scapes* longer than the leaves, bright-red, glabrous, simple, 3-flowered; bracts 2 at the base of the pedicels, broadly oblong, concave, crimson, ciliate. *Flowers* ternate pedicelled, the two lateral female, the central rather larger and male, about one and a half inches in diameter; petals 4, crimson, the outer ovate very obtuse, the inner rather smaller, oblong. *Stamens* 8–10-small, filaments almost free, as long as the oblong anthers. *Ovary* 3-winged; lateral wings short, obtuse; dorsal long, triangular acute; styles 3, with twisted short horse-shoe-shaped stigmas; placenta bifid.—*J. D. H.*

Fig 1, Female flower with petals removed; 2, stamens:—*both enlarged.*

6253.

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TAB. 6253.

DRACÆNA FRUTICOSA.

Native country unknown.

Nat. Ord. LILIACEÆ.—Suborder ASPARAGACEÆ.

Genus DRACÆNA, *Vand.* (*Baker, in Journ. Linn. Soc.* vol. xiv. p. 523).

DRACÆNA *fruticosa*; 10–15-pedalis, foliis sessilibus secus ramos elongatos laxe dispositis lanceolatis acutis pedalibus vel sesquepedalibus, medio 12–15 lin., supra basin 6–9 lin. latis viridibus membranaceo-coriaceis, superioribus ascendentibus, inferioribus patulis, costa præter apicem perspicua, marginibus concoloribus, paniculis amplis deltoideis, racemis modice densis, bracteis minutis albidis lanceolatis, pedicellis brevibus apice articulatis infimis 3–4-nis, perianthii albi subpollicaris segmentis tubum superantibus, staminibus perianthio vix brevioribus, stigmate demum exserto.

D. fruticosa, *K. Koch, Wochenschrift,* 1867, p. 236; *Baker in Journ. Linn. Soc.* vol. xiv. p. 532.

D. ensifolia, *Regel, Gartenflora,* 1864, p. 321; tab. 451, 1871, p. 138, *non Wallich.*

This fine species is now widely spread in cultivation, but its native country has never been satisfactorily ascertained. It does not exist amongst the extensive set of wild specimens from various parts of tropical Africa, and preserved in the Kew herbarium. It was supposed by Dr. Regel to be identical with Wallich's *D. ensifolia*, but that is clearly the same as Roxburgh's *D. angustifolia*, as I have ascertained from the examination of Wallich's original specimens, distributed as No. 5143 of his great Indian herbarium. The present plant has the general habit and lax leaves of the Mauritian and tropical African *D. reflexa*, Lam., but is more robust, with larger leaves and flowers, and a longer perianth tube. The plate was drawn from a plant that flowered in the Palm House at Kew in April, 1862.

DESCR. *Stems* ten or fifteen feet high, erect, simple or branched. *Leaves* laxly disposed over a space of several feet, the upper ascending, the lower spreading, clasping half way round the branch at the base, lanceolate, a foot or even a foot-and-a-half long, an inch or an inch and a quarter broad at the middle, narrowed gradually to an acute point, and to half an inch broad above the base, moderately firm in texture, bright green, the midrib distinct except at the very tip, the margins concolorous. *Panicle* ample, deltoid, with a moderately dense terminal raceme half a foot long, and smaller spreading or ascending side ones; bracts minute, membranous, whitish, lanceolate or deltoid; pedicels one sixth to one fourth in. long, articulated at the tip, the lower ones often clustered in threes or fours. *Perianth* whitish, about an inch long, the reflexing divisions exceeding the tube. *Stamens* about as long as the perianth. *Stigma* obscurely three-lobed, finally exserted.—*J. G. Baker.*

Fig. 1, Complete flower, with tip of pedicel; 2, pistil complete:—*both magnified.*

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TAB. 6254.

ONCIDIUM STRAMINEUM.

Native of Mexico.

Nat. Ord. ORCHIDEÆ.—Tribe VANDEÆ.

Genus ONCIDIUM, *Swartz*, (*Lindl. Fol. Orchid.* Oncidium).

ONCIDIUM (Paucituberculatæ) *stramineum*; pseudobulbis 0, foliis oblongo-lanceolatis in petiolum brevem crassum augustatis subacutis crasse coriaceis dorso secus costam obtusis concoloribus, panicula breviuscula nutante densiflora, floribus pedicellatis $\frac{3}{4}$ poll. diam. albis aurantiaco-maculatis, bracteolis parvis, sepalis rotundatis petalisque consimilibus margine crispatis, labelli breviter unguiculati lobis lateralibus oblongis falcato-recurvis carnosis intermedio substipitato reniformi longioribus, disci tuberculis 2 2-lobis v. 4 plus minusve per paria confluentibus, columnæ brevis alis carnosulis decurvis.

O. stramineum, *Lindl. in Bot. Reg.* 1838, *Misc.* No. 63; 1840, t. 14: *Fol. Orchid. et Oncid.*, p. 36; *Walp. Ann.* vol. vi. p. 776.

O. Columbæ, O. Columbiæ, et O. Lindeni, *Hort.* (*fid. Rchb. f.*)

Lindley describes this, in the miscellaneous notices to vol. 24 of the Register, as one of the first plants sent to the Horticultural Society by Hartweg, when collecting for that establishment, and as being a stove epiphyte and native of Zacuapan, near Vera Cruz; but in the description published two years afterwards with the figure, he states that it will not bear the heat given to the West India *Oncidia*, for that in heat its leaves are small and flowers imperfectly developed, whereas under cooler treatment it flourished. This latter statement, coupled with the fact that it was found in company with a rare Berberry, raised the suspicion that it rather came from the mountainous parts of Mexico than the hot damp neighbourhood of Vera Cruz. A reference to Bentham's "Plantæ Hartwegianæ," (p. 29), favoured this view, for amongst the plants gathered by Hartweg at Zacuapan (a Zaquapan) were species of *Monotropa*, *Lobelia* and *Escobedia*, all temperate forms; and on reference to the extracts of Hartweg's journals, published in the Horticultural Society's Transactions (Ser. 2, vol. iii. p. 116), I find that Zacuapan is a village elevated 3000 feet on the eastern slopes of Orizaba (itself 17,000 feet high), with a temperate climate and the richest vegetation in Mexico. I do not find the name Zaquapan in any map accessible to me, but there is a town of Zacualpan in the mountainous district of Mexico, about 65 miles S.S.W. of the capital.

O. stramineum belongs to a small section of the genus, and according to Lindley, is easily recognised by its rigid unspotted leaves, not keeled at the back; its flowers have a faint primrose odour. The specimen here figured first flowered at Kew in May, 1866, when the accompanying drawing was made.

DESCR. *Pseudobulbs* none. *Leaves* six to eight inches long, oblong-lanceolate, subacute, contracted into a short stout petiole, very rigid, thick and coriaceous, uniformly deep green, hardly keeled at the back, which is rounded down the middle line, and not acute at all. *Panicle* stout, inclined to drooping, more or less branched; peduncle short, stout; flowers crowded; pedicels and ovary together half an inch long, slender; bracts minute. *Flowers* three quarters of an inch across, white speckled with red on the lateral sepals, lip, and column. *Sepals* and *petals* widely spreading, almost orbicular, crisped, fleshy, dorsal sepal concave. *Lip* very shortly clawed; lateral lobes oblong, obtuse, falcately recurved, with the upper margin recurved; middle-lobe, shortly broadly stipitate, kidney-shaped, smaller than the lateral lobes; warts on the disk, 2 on each side, more or less confluent in pairs. *Column* short, with broad wings.—*J. D. H.*

Fig. 1, Flower; 2, the same with sepals and petals removed:—*both enlarged.*

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CONTENTS OF No. 381, SEPTEMBER, 1876.

TAB. 6250.—LILIUM PHILLIPINENSE.
„ 6251.—LYCASTE LASIOGLOSSA.
„ 6252.—BEGONIA DAVISII.
„ 6253.—DRACÆNA FRUTICOSA.
„ 6254.—ONCIDIUM STRAMINEUM.

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PLATE
1. *Frontispiece.* View on the Palmiet River, near Westville.
2. Physical and Topographical Map of the Colony.
3. Plan of the Inner Bay or Harbour.
4. Sandstone Wall on the shoulder of Pietermaritzburg Table Mountain.
5. Mines at the Diamond Fields on the Vaal River.
6. The Valley of the Umgeni from Table Mountain.
7. The Lower Falls of the Umgeni.
8. Great Fall of the Umgeni at Howick.
9. Glade at Aliceville, with Wild Bananas and Date-palms.
10. Euphorbia Caput-Medusæ.
11. Arduinia grandiflora—Amatungulu.
12. Scarlet Cyrtanthus—Flame-lily.
13. Thunbergia Natalita.
14. Portrait of Langalibalele, Chief of the Amahlubi Kaffirs.
15. Mission on the Hills near Verulam.
16. Kranzkop; overlooking the Tugela Valley.

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6255.

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Tab. 6255.

SERAPIAS PAPILIONACEO-LINGUA (hybrid).

Native of Southern France.

Nat. Ord. Orchideæ.—Tribe Ophrydeæ.

Genus Serapias, *Linn.* (*Lindl. Gen. and Sp. Orchid.* p. 377).

Serapias *papilionaceo-lingua*; foliis anguste lanceolatis, bracteis flores æquantibus v. superantibus, spica breviuscula 5–6-flore, sepalis ovatis subacutis patentibus pallide virescentibus roseo-suffusis, petalis liberis sepalis concoloribus et subæquantibus late ovatis subacutis, labello late cordato 3-lobo læte purpureo marginibus crenulatis, lobis rotundatis, lateralibus magnis intermedio minore, columna brevi appendice brevissimo ovato terminata.

S. papilionaceo-lingua, *Barla, Flore Illust. de Nice et des Alpes Maritimes*, p. 34. t. 22, f. 4–8.

S. triloba, *Viv. Ann. Bot.* vol. i. pars 2. p. 186. *et Fl. Ital. Fragm.* p. 11. t. 12. f. 1. *Lindl. Gen. and Sp. Orchid.* p. 378. *Koch, Synops. Fl. Germ. ed.* 2. p. 799. *Reichb. Ic. Fl. Germ.* p. 9 *et* 171. *t.* 438. *Parlat. Fl. Ital.* vol. iii. p. 433.

Isias triloba, *De Not. in Mem. del' Acad. R. delle Scienz. di Torino*, 1844, ser. 2. vol. vi. *cum Ic.*

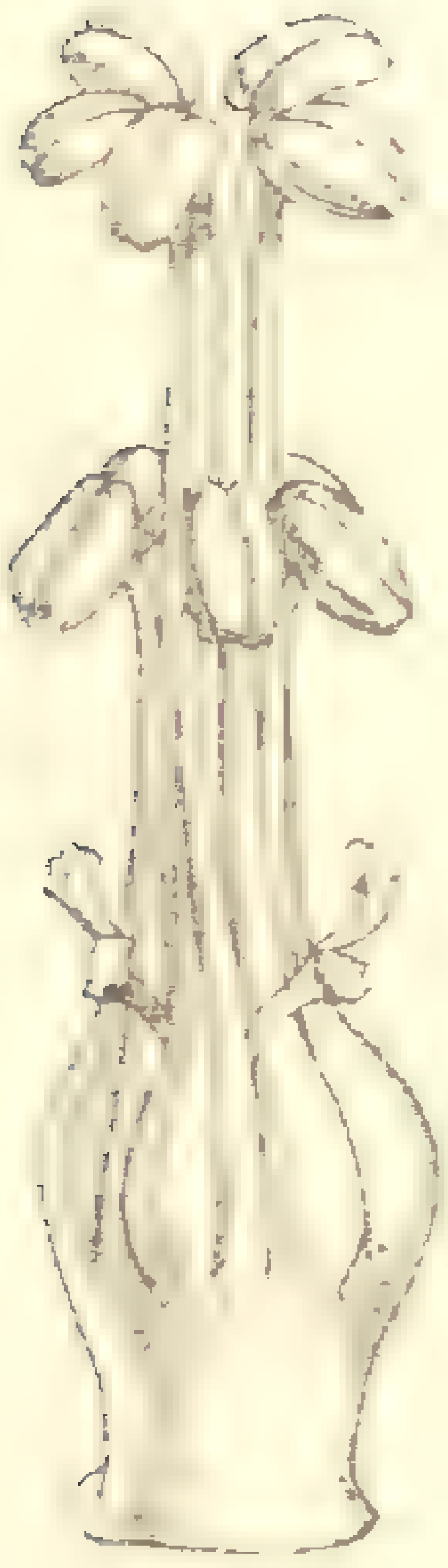
This very rare remarkable terrestrial Orchid is presumed to be a natural hybrid between *Serapias Lingua*, Linn. (tab. Hort. 5868 B) and *Orchis papilionacea*, Linn., having been found in considerable abundance growing in company with those plants, and with *Serapias longipetala*, Poll (a species closely allied to *I. Lingua*). The morphological characters upon which its hybrid origin are believed to be well founded are the free petals, the fine purple colour of the lip, differing entirely from that of any *Serapias*, its crenulated margin and its large lateral lobes; to these I should add as of greater importance than any of them, the short stout column and its very small short broad ovate beak, which beak, in all the known species of *Serapias*, is linear and as long as or longer than the column.

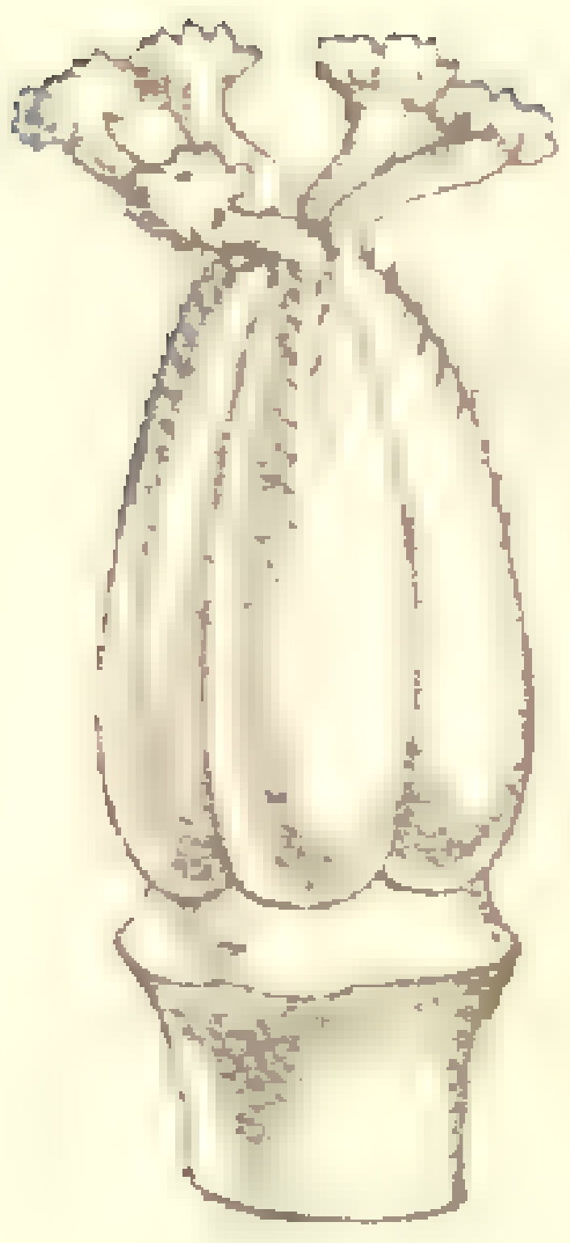
This hybrid was first found near Genoa, and subsequently at Berre, near Nice, and other places on the Riviera, as well as near Trieste and Lucca, and there are Herbarian specimens at Kew from the department of Gers, in France. It must not be confounded with a very closely allied hybrid between *O. laxiflora* and *Serapias cordigera*, which has been found as far north as Vannes in Brittany. I am indebted to Mr. Elwes for the specimen here figured which he received from M. Max Leichtlin, of Carlsruhe.

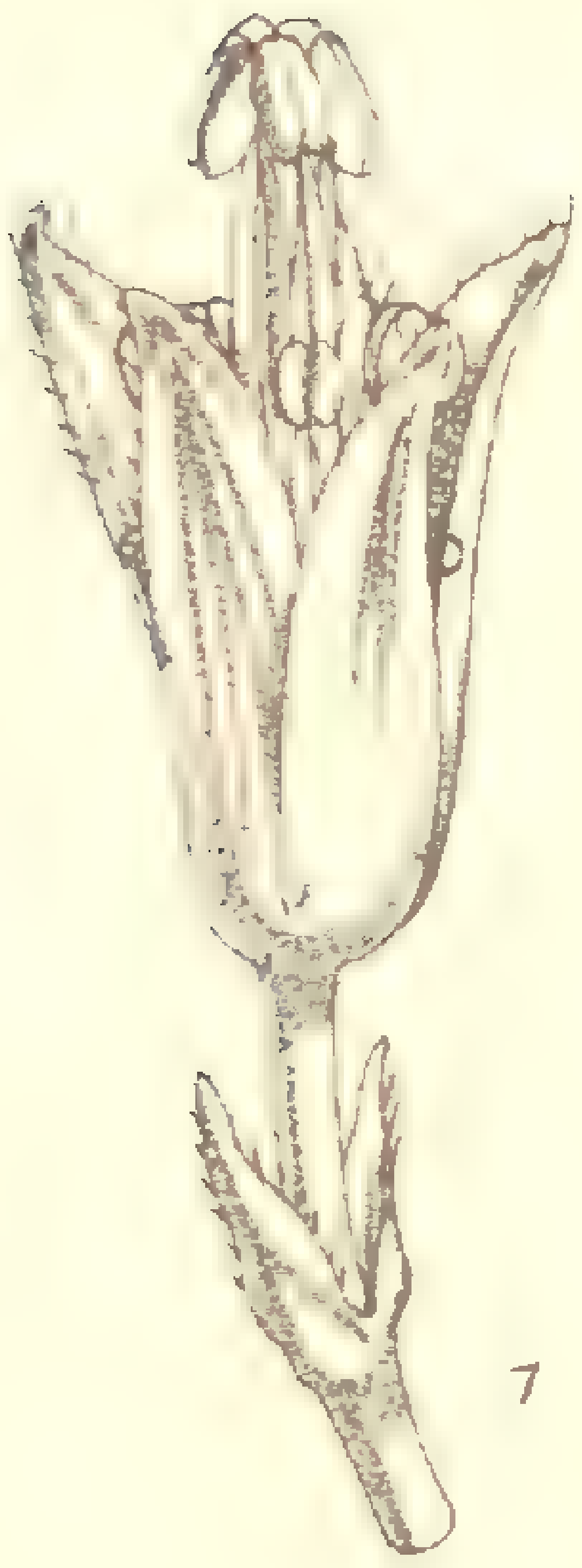
Descr. Tuber globose; one sessile the other shortly stalked. *Stem* a foot or more high and leaves pale green, unspotted. *Leaves* narrow, lanceolate, acuminate. *Spikes* short, 5–6-flowered; bracts equalling or exceeding the flowers, green and pink, purple. *Flower* $1\frac{1}{4}$–$1\frac{3}{4}$ inch long from the tip of the dorsal sepal to that of the lip. *Sepals* and *petals* pale green and pale purple, veined; the petals erect, free, broader than usual in *Serapias*, spreading and recurved. *Lip* large, broadly cordate, bright red-purple margins crenulate; base with two tubercles on the very short claw; lateral lobes rounded, larger than the mid-lobe which is almost orbicular. *Column* short, stout, its apex produced into a small broadly ovate appendage.—*J. D. H.*

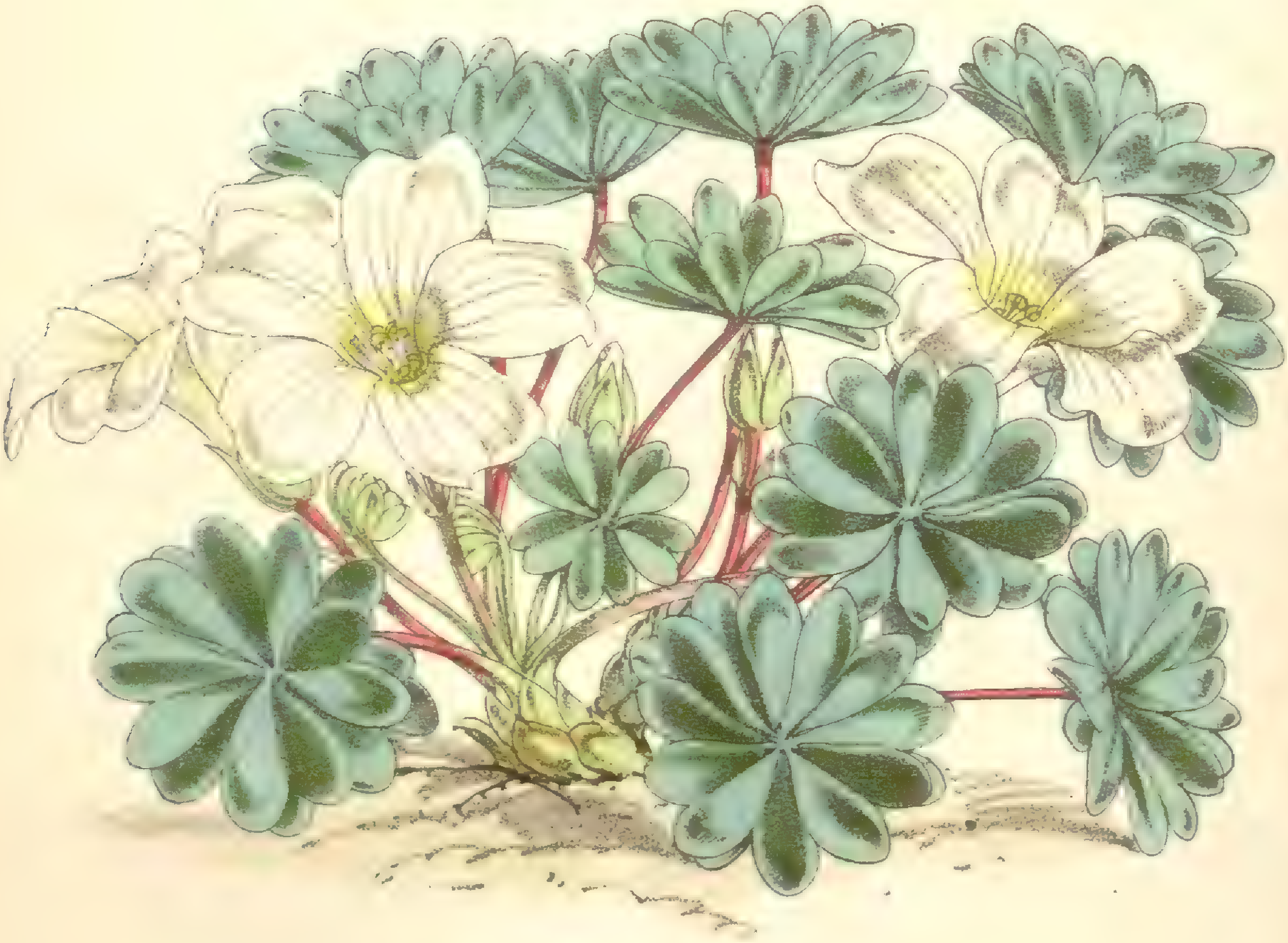
Fig. 1, Column and lip; 2, pollen-masses:—*both enlarged.*

6256









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TAB. 6256.

OXALIS ENNEAPHYLLA.

Native of Fuegia and the Falkland Islands.

Nat. Ord. GERANIACEÆ.—Tribe OXALIDEÆ.

Genus OXALIS, *Linn.* (*Benth and Hook. f. Gen. Plant.* vol. i. p. 276).

OXALIS *enneaphylla*, acaulis, rhizomate crasso repente bulbifero squamoso, foliis longe petiolatis 9-20-foliolatis, petiolo basi scarioso-stipulato, foliolis radiantibus glaucis plus minusve pubescentibus cuneato-obcordatis 2-lobis, pedunculis petiolo æquilongis 1-floris 2-bracteolatis, floribus amplis albis, sepalis sericeis villosisve apicibus interdum bipunctatis, stylis hirsutis.

O. enneaphylla, *Cav. Ic.* vol. v. p. 7. t. 411; *Gaud. in Ann. Soc. Nat.* vol. v. p. 105, et in *Freyc. Voy. Bot.* p. 137; *D'Urville* in *Mem. Soc. Linn. Par.* vol. v. p. 616; *DC. Prod.* vol. i. p. 702; *Hook. Ic. Pl.* t. 494; *Hook. f. Fl. Antarct.* vol. i. pars i. p. 253.

VINAIGRETTE, *Pernetty, Voy.* vol. ii. p. 54.

In the Flora Antarctica I have described this plant as the pride of the Falkland Islands, where it grows in such profusion at Berkeley Sound, on banks overhanging the sea, as to cover them with a mantle of snowy white in the spring month of November; adding that it is an excellent antiscorbutic and agreeable pot herb, though too acid to be used except in tarts and puddings.

When the above was written this plant was supposed to be confined to the Falkland Islands; it was, however, found in the Straits of Magellan by D'Urville's Expedition, and by Lechler at Cape Negro, also in the Straits. It must, however, be a very rare and local Antarctic American plant, as it escaped the notice of all other Fuegian collectors, and is not included in Gay's "Flora of Chili," where many species of the genus are described. There is another Fuegian *Oxalis* closely allied to our English *O. Acetosella*. As in the last-named plant the flowers of *O. enneaphylla* are dimorphic, one form (that here figured) having the stamens much longer than the styles; while in the other the styles far exceed the stamens, as described in De Candolle's Prodromus. This dimorphic condition, now so well recognised as a common phenomenon amongst flowering plants, is subservient to the purpose of cross-fertilization. The specimen here figured was brought to Kew along with other plants in a Ward's case by H. M. S. Challenger, from the Falklands in June last, and flowered in July; it is a very small individual, full grown ones often having petioles and peduncles 6–9 inches long, and three whorls of leaflets. It will unquestionably prove a beautiful and interesting rock-work plant, requiring, however, coolness and moisture for successful cultivation.

DESCR. *Rootstock* 1 to 2 inches long, nodose, simple or branched, clothed with scarious stipular leaf-sheaths, tip villous. *Leaves* numerous, glabrous pilose or silky, petiole 4–6 inches long, obscurely jointed above the stipule; leaflets 9–20, whorled, usually 2-seriate, obcordate, glaucous, rather fleshy; stipules linear, scarious, red-brown. *Peduncles* equalling the petioles, 2-bracteolate above the middle; bracteoles scarious. *Flowers* solitary, 1–1½ inch in diameter. *Sepals* lanceolate, subacute, ciliate, with at times 2 black dots towards the apex. *Petals* much exceeding the sepals, obovate-obcordate, spreading, white or pale rose-coloured, with purple veins. *Stamens* 10, alternately long and short, erect. *Styles* 5, stigmas capitate. *Capsule* oblong, silky.—*J. D. H.*

Fig. 1, Top of peduncle, bracteoles, and flower, with petals removed; 2, stamen and pistil; 3, pistil:—*all enlarged.*

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The binder is requested to cancel the description of TAB. 6257. LAURENTIA CARNOSULA, *and to substitute for it the accompanying*, 6257. DOWNINGIA PULCHELLA.

TAB. 6257.

DOWNINGIA PULCHELLA.

Native of California.

Nat. Ord. CAMPANULACEÆ.—Tribe LOBELIEÆ.

Genus DOWNINGIA, *Torrey*. (*Benth. et Hook. f. Gen. Plant.* vol. ii. p. 550).

DOWNINGIA *pulchella*; glaberrima, erecta v. diffuse ramosa, foliis carnosulis lineari-lanceolatis acutis v. subobtusis integerrimis, floribus axillaribus sessilibus, calycis tubo elongato, limbi lobis linearibus, corollæ tubo brevi, labii superioris 2-partiti segmentis ovato-lanceolatis, labii inferioris late quadrati 3-lobi lobis rotundatis, capsula lineari 1–1½ pollicari.

D. pulchella, *Torr. in Pacif. Rep.* vol. iv. p. 116. *A. Gray in Bot. Geol. Surv. Calif.* vol. i. p. 444, (1876).

CLINTONIA pulchella, *Lindl. in Bot. Reg. t.* 1909; *Don in Sweet. Brit. Fl. Gard. Ser.* 2, *t.* 412.

A very elegant little annual, a native of marshy places, river-banks, and springs in N.W. America, from British Columbia to California; introduced by Douglas almost half a century ago, but long lost to cultivation. It has again been introduced by our excellent contributor, Mr. Thompson, of Ipswich, who flowered it in July, 1875, and to whom I am indebted for the specimen here figured.

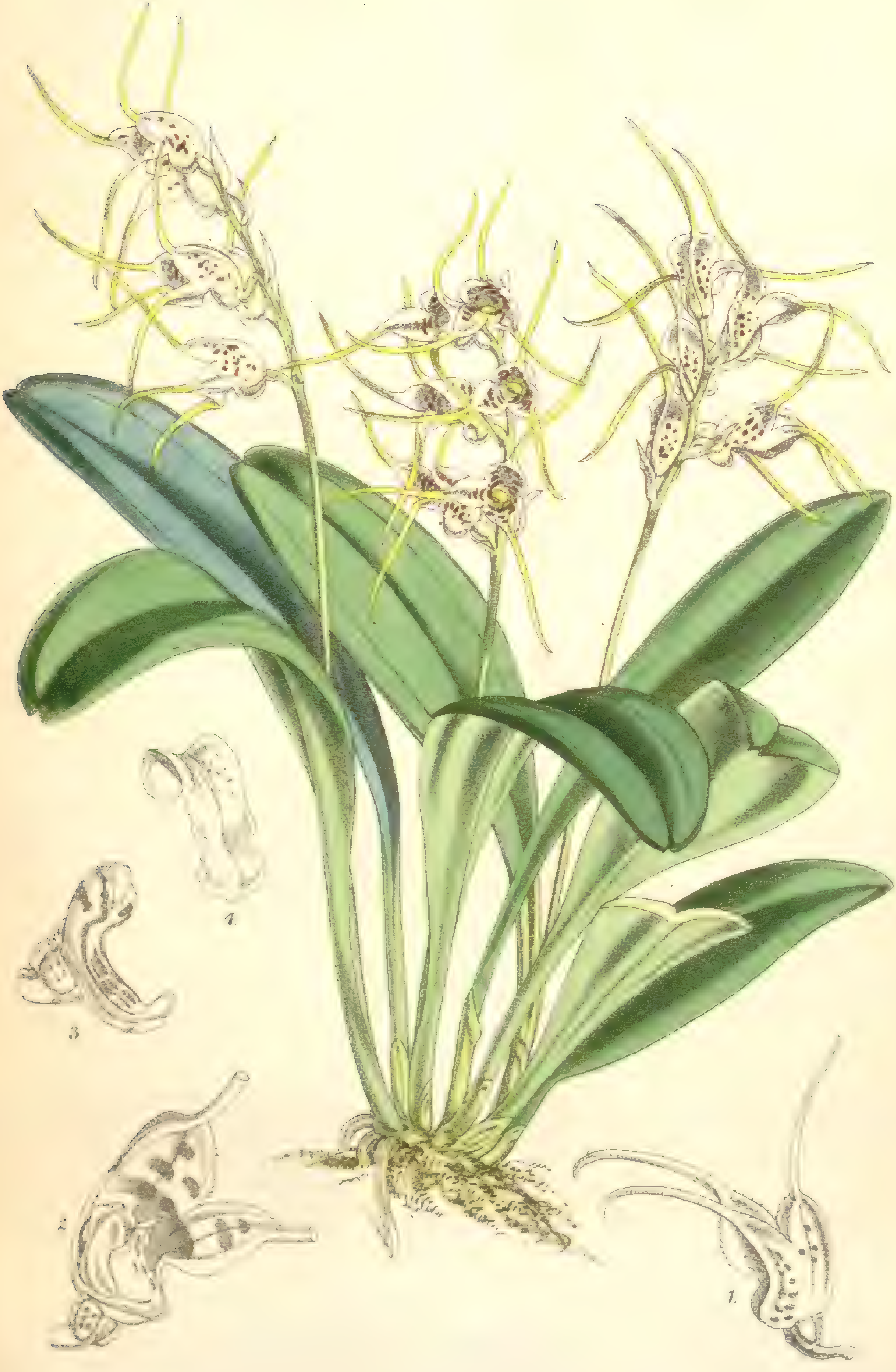
The genus *Downingia* contains two supposed Western American species and a Chilian one. The other North American species is the *D. elegans*, Torr. (*Clintonia elegans*, Lindl. in Bot. Reg. t. 1241, of which *C. corymbosa*, A. DC. Prod. vol. vii. p. 347, is a form.) This I find it quite impossible to distinguish by Herbarium specimen or drawings from *D. pulchella*. Asa Gray, who is the last describer of the species, and whose authority on North American plants is so high that it almost compels acceptance of his views, keeps the two distinct in the recently published 'Flora of California,' saying that they are very like one another, but that the leaves of *pulchella* are mostly narrower and obtuse, the divisions of its upper lip ovate-lanceolate or oblong (not lanceolate), and that the lower lip is much dilated and deeply 3-lobed with a large white or yellowish centre (that of *D. elegans* having a broad white spot).

The Chilian species again is known only from dried specimens, and these precisely resemble the Californian in all apparent characters of habit, foliage, flower, and fruit, except that, according to Bentham in the Genera Plantarum, the latter appears to dehisce by one suture instead of two or three. I find, however, great variability in the dehiscence of the capsules of *D. pulchella*; and as the seeds of the Californian and Chilian plants are otherwise identical, there are no apparent grounds for the separation. If the union of these be confirmed, it will add another to the already numerous list of plants common to Chili and temperate Western S. America, which are absent in intermediate latitudes.

Descr. A very variable, perfectly glabrous annual, erect or prostrate or ascending, with stout or slender branches from the root 6–18 inches long. *Leaves* emarginate one half to one inch long, opposite or alternate, fleshy, sessile, linear, linear-oblong, or ovate-oblong, acute or obtuse, quite entire. *Flowers* very variable in size, sessile, axillary in the upper leaves, forming leafy racemes. *Calyx-tube* linear, exceeding the leaves; lobes five, linear-oblong, obtuse, fleshy, spreading. *Corolla* $\frac{1}{4}$–$\frac{3}{4}$ inch in diameter, pale violet-blue, with a yellow area surrounded with a white border on the lower lip; *tube* very short, obconic; *lips* very spreading; upper smaller, divided to the base into two nearly parallel lanceolate obtuse segments; lower much larger, nearly quadrate, but broader than long, 3-lobed, the lobes very obtuse. *Capsule* one to nearly 3 inches long, linear, obtusely 3-angled, 1-celled, many-seeded, splitting longitudinally into 2–3 membranous placentiferous valves. *Seeds* minute, shortly fusiform, acute at both ends; testa smooth, pale brown.—*J. D. H.*

Fig. 1, Flower, *magnified.*

6258



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TAB. 6258.

MASDEVALLIA POLYSTICTA.

Native of Northern Peru.

Nat. Ord. ORCHIDEÆ.—Tribe PLEUROTHALLIDEÆ.

Genus MASDEVALLIA, *Ruiz and Pav.* (*Lindl. Gen. and Sp. Orchid.* p. 192).

MASDEVALLIA *polysticta*; foliis obovato-lanceolatis in petiolum gracilem angustatis apice 2-dentatis, scapis gracilibus folia excedentibus nudis, floribus racemosis niveis purpureo-punctatis, bracteis lanceolatis ovaria æquantibus, sepalorum tubo breviter campanulato basi valde gibbo et tumido intus puberulo, lobis semicircularibus erosis in caudas patentes duplo longiores abrupte angustatis, petalis parvis falcato-oblongis apices versus erosis, labello linguæformi apicem versus in lobum terminalem æquilatum undulatum rotundatum desinente, disco obscure carinato, columna superne serrata.

M. polysticta, *Reichb. f. in Gard. Chron.* 1874, vol. i. p. 338, and ii. 290.

This sparkling little *Masdevallia* is one of three brought to notice by Reichenbach in the *Gardeners' Chronicle*, as having been imported from Peru by Mr. Ortgies of the Botanic Gardens of Zurich; all of these are natives of the temperate region of the Andes in Northern Peru, and were discovered by Mr. Roezl; of these the subject of the plate flowered simultaneously with Messrs. Veitch, and in the Prince Carl Egon zu Fürstenberg's Garden at Donaueschingen. Our drawing was, however, made from a plant that flowered with Mr. Green, of Reigate, in March of last year. Mr. Roezl informed Dr. Reichenbach that he had found tufts of this species with twenty racemes of flowers; and that it was quite like *Odontoglossum nævium* or *O. blandum*.

DESCR. Densely tufted. *Leaves* with the petiole four to five inches long, obovate-oblanceolate, narrowed into the slender petiole, 2-toothed at the tip, bright green, 3-nerved, channelled down the middle; basal sheaths short, appressed, greenish. *Scapes* numerous, slender, exceeding the leaves, naked, 5–6-flowered; bracts lanceolate, exceeding the ovary, pedicels short. *Ovary* short, turgid, with three crenulate angles. *Flowers* 1½ inch in diameter from the tip of the dorsal to that of either lateral sepal, white speckled with purple. *Tube* of cuneate sepals $\frac{1}{4}$ inch long, shortly campanulate, incurved, very tumidly gibbous below, 3-angled, angles keeled; free parts of sepals almost semi-circular, concave, erose on the margins, tips suddenly contracted into slender spreading yellow tails that are twice as long as the rest of the perianth. *Petals* linear-oblong, falcate, apiculate, toothed below the apex in front. *Lip* tongue-shaped, recurved, suddenly contracted towards the tip, which consists of a nearly orbicular-terminal lobe, which is of the same diameter as the rest of the lip; disk obscurely carinate. *Column* with serrated margins above.—*J. D. H.*

Fig. 1, Flower; 2, the same with the perianth cut longitudinally; 3, column, ovary, and claw of lip; 4, limb of lip:—*all enlarged,*

6259

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TAB. 6259.

CALLIPHRURIA HARTWEGIANA.

Native of New Granada.

Nat. Ord. AMARYLLIDACEÆ.—Tribe PANCRATIEÆ.

Genus CALLIPHRURIA, *Herbert*, (*Kunth. Enum. Pl.* vol. v. p. 692).

CALLIPHRURIA *Hartwegiana*; bulbo ovoideo stolonifero, tunicis brunneis membranaceis, foliis oblongo-spathulatis acutis firmis glabris viridibus distincte petiolatis, caule tereti pedali, umbellis 6–8-floris, bracteis parvis linearibus membranaceis, pedicellis flore brevioribus, ovario globoso, perianthii albi tubo infundibulari segmentis oblongis æquilongo, staminibus limbo brevioribus, stylo exserto apice stigmatoso distincte tricuspidato.

C. Hartwegiana, *Herbert in Bot. Reg.* 1844, Misc. no. 83; *Kunth. Enum. Pl.* vol. v. p. 692).

This plant is still the only known species of the genus. Of familiar types it comes nearest *Eucharis* and *Eurycles*, but besides the technical distinction, which depends mainly on the stamens (which here are constructed on the same plan as in the section *Porrum* of the genus *Allium*, but all six quite uniform), our plant is constructed throughout upon a smaller scale, with firmer narrower leaves, and flowers not above an inch in diameter when expanded. It was discovered by Hartweg about 1842, amongst the mountains of the province of Bogota in New Granada, and has lately been imported by Mr. William Bull, from one of whose specimens the present figure was made in July, 1874.

DESCR. *Bulb* ovoid, an inch thick, copiously stoloniferous, with brown membranous tunics. *Leaves* about four in a rosette, cotemporary with the flowers, oblong-spathulate, acute, firm and rather coriaceous in texture, bright green, glabrous, narrowed into a distinct petiole two to three inches long, which is flat on the face and rounded on the back. *Scape* terete, about a foot long; umbels 6–8-flowered; bracts small, membranous, linear; pedicels one half to three fourths of an inch long. *Perianth* white, funnel-shaped, an inch long, the oblong segments, which spread almost horizontally when fully expanded, as long as the tube. *Stamens* six, inserted on the same level at the throat of the tube. *Filaments* petaloid, with three large linear teeth at the top, the middle one of which bears the yellow ligulate versatile anther. *Ovary* globose; ovules two to three in a cell. *Style* filiform, exserted, straight, distinctly tricuspidate at the stigmatose tip.—*J. G. Baker.*

Fig. 1, Entire flower cut open; 2, a single anther; 3, horizontal section of ovary:—*all magnified.*

6260

W. Fitch del et Lith

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TAB. 6260.

ICACINA MANNII.

Native of Old Calabar.

Nat. Ord. OLACINEÆ.—Tribe ICACINEÆ.

Genus ICACINA, *A. Juss* (*Benth. and Hook. f. Gen. Plant.* vol. i. p. 352).

ICACINA *Mannii ;* frutex scandens, ramis gracilibus glabris, foliis breviter petiolatis ellipticis caudato-acuminatis integerrimis basi rotundatis membranaceis glaberrimis v. costa subtus et petiolo puberulis, costa nervisque remotis gracilibus, floribus in cymas fasciculatas v. dichotomas axillares brevissime pedunculatas sericeo-hirsutas dispositis flavis, bracteis minutis, calycis lobis ovatis, petalis extus sericeis intus barba transversa excepta glabris, stigmate punctiformi.

I. Mannii, *Oliv. Fl. Trop, Afr.* vol. i. p. 357.

The genus *Icacina* consists of but few species, all as far as hitherto observed, natives of Western Tropical Africa; their uses, if any, are unknown, and they vary much in habit. The type of the genus *I. senegalensis*, Juss, has terminal long-peduncled panicled cymes of flowers, as described in the generic character published in the "Genera Plantarum." Since that work appeared, however, other species have been added by Professor Oliver, from West African collections, in one of which the flowers are in axillary dichotomously branched very spreading cymes, whilst in another, the subject of the present plate, the inflorescence is reduced to almost sessile fascicles, which, however, on careful examination, are found to be reducible to shortly peduncled forked cymes. *I. Mannii* is a native of the Gulf of Guinea, where it was discovered at Old Calabar by Mr. Gustav Mann (now Inspector of India-rubber Forests in Assam), when collecting for the Royal Gardens in 1863; he, however, sent no living specimens. In 1865 its large tuberous roots were sent by the Rev. Mr. Thompson, to Mr. Clark, of the Glasgow Botanical Garden, which flowered in October, 1870, and from which the accompanying drawing was made.

DESCR. *Root* a large tuber 6–12 inches in diameter (*Clark*).

Stem slender, climbing, terete, glabrous. *Leaves* alternate, five to seven inches long (twelve in young plants), shortly petioled, elliptic, abruptly narrowed into a long point, rounded at the base, quite entire, membranous, glabrous, or with the midrib beneath and petiole puberulous; nerves few, distant, slender. *Cymes* silky, axillary, very short, solitary or fascicled, dichotomously branched; bracts minute, lanceolate. *Flowers* about one quarter of an inch long. *Calyx* 5-lobed, silky; lobes broad, ovate, much shorter than the corolla. *Petals* linear-oblong, yellow, externally silky, glabrous within, except the transverse beard of flexuous hairs across the middle. *Stamens* exserted, filaments slender. *Ovary* silky, narrowed into a slender style; stigma a minute point.—*J. D. H.*

Fig. 1, Flower; 2, petal; 3, stamen; 4, ovary; 5, vertical, and 6, transverse sections of ditto:—*all enlarged.*

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CONTENTS OF No. 382, OCTOBER, 1876.

TAB. 6255.—SERAPIAS PAPILIONACEO-LINGUA (hybrid).
„ 6256.—OXALIS ENNEAPHYLLA.
„ 6257.—LAURENTIA CARNOSULA.
„ 6258.—MASDEVALLIA POLYSTICTA.
„ 6259.—CALLIPHRURIA HARTWEGIANA.
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ILLUSTRATIONS.

PLATE
1. *Frontispiece.* View on the Palmiet River, near Westville.
2. Physical and Topographical Map of the Colony.
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4. Sandstone Wall on the shoulder of Pietermaritzburg Table Mountain.
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8. Great Fall of the Umgeni at Howick.
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16. Kranzkop; overlooking the Tugela Valley.

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Walker (**R.**) Flora of Oxfordshire and its Contiguous Counties, arranged in Easy and Familiar Language, according to the Linnæan and Natural Systems, with an introduction to Botany, plates, 8vo., *half morocco*, gilt top, 1833, 6s. 6d.

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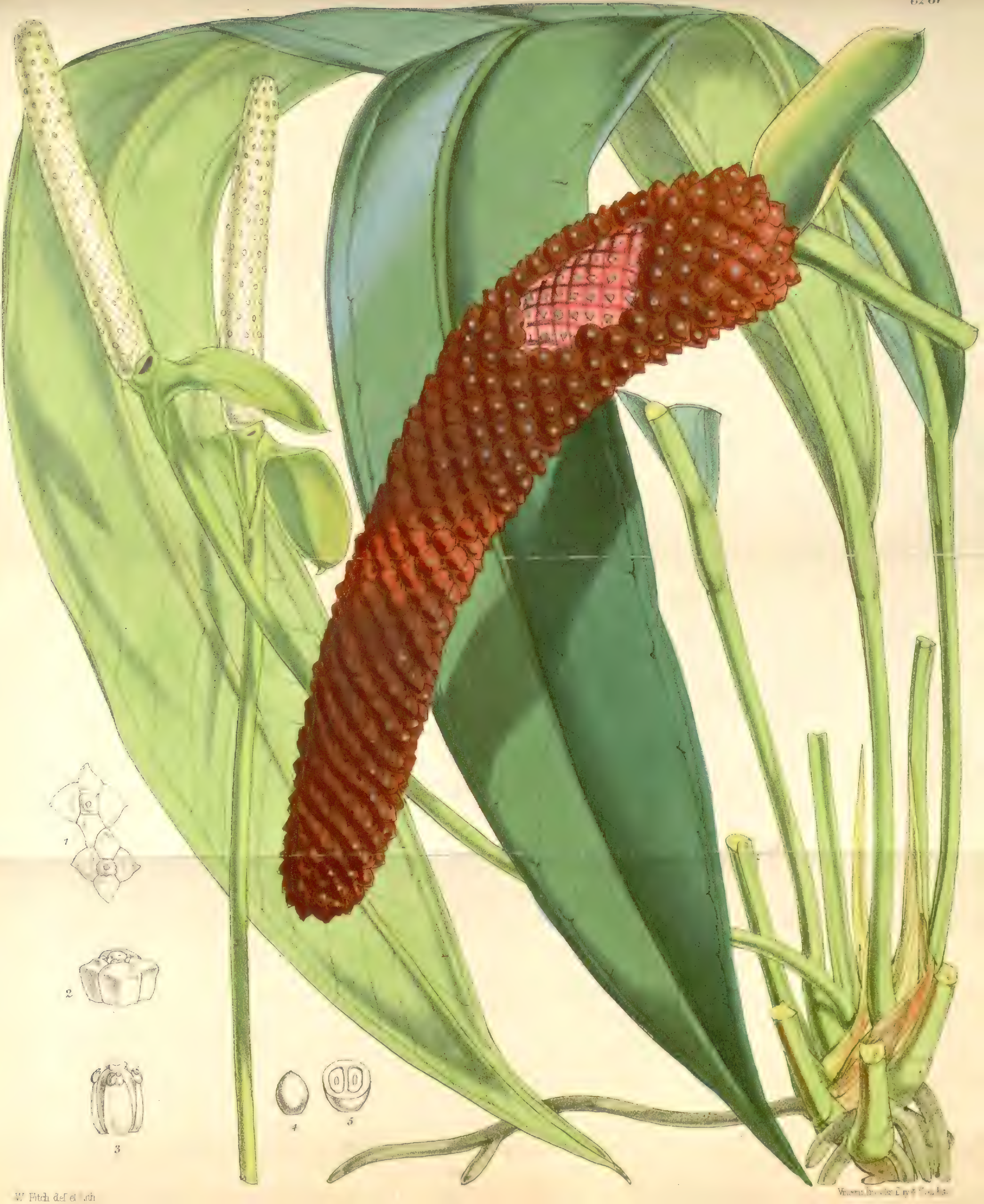
6261



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Tab. 6261.

ANTHURIUM Bakeri.

Native of Costa Rica.

Nat. Ord. Aroideæ.—Tribe Orontieæ.

Genus Anthurium, *Schott* (*Prod. Syst. Aroid.* p. 436).

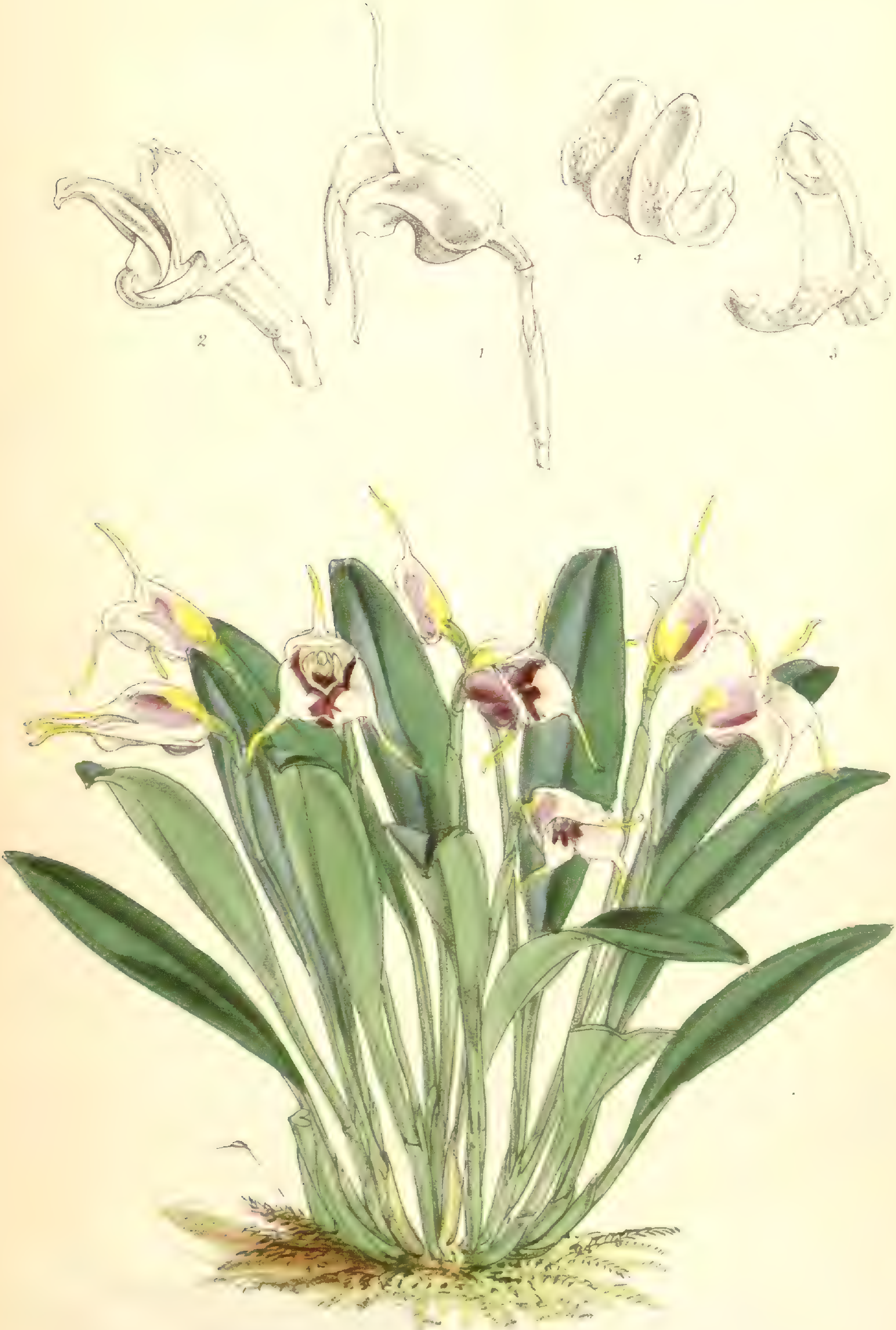
Anthurium (*Erythropodium*) *Bakeri*; caudice brevi radicante, foliis 1½–2 pedalibus anguste elliptico-lanceolatis acuminatis coriaceis 3-nerviis, basi angustatis, petiolo subtereti 3–5-pollicari, geniculo ½-pollicari, nervo medio mediocri lateralibus gracilibus, nervulis erecto-patentibus, pedunculo petiolum longe superante, spatha 1½-pollicari oblonga apice rotundata reflexa viridi basi non amplectente, spadice subsessili v. breviter pedunculata 3-pollicari obtuso, perianthii segmentis cubicis, filamentis late oblongis, antheris minutis, ovario ovoideo, stigmate discoideo sessili, fructibus ovoideis apiculatis corallinis spadicem valde incrassatum et elongatum dense obtegentibus, ovarii loculis 1-ovulatis.

The vast genus *Anthurium*, contains upwards of 180 species (as enumerated by Schott in his Prodromus) all natives of tropical America, and of which between 50 and 60 were known to that author in a living state, chiefly from specimens grown in the rich collection at the Imperial Palace of Schœnbrun (Vienna) and obtained principally by himself. At Kew, which is also rich in tropical Aroids, nearly one hundred species of this genus are now in cultivation, forming one of the principal ornaments of the Aroid-house, where, for number of species, beauty and variety of form of foliage, they dispute the palm with the *Philodendrons*. They are plants easy of cultivation if supplied with shade, moisture, and a high temperature, and being remarkably free from insect-pest they are well adapted for stove culture.

A. Bakeri was imported from Costa Rica by Mr. Bull, who presented it to the Royal Gardens, where it flowered first in June, 1872. I am indebted to Mr. J. G. Baker, whose name it bears, for notes made upon the living plant when in flower. I have referred it to Schott's section *Erythropodium*, though its peduncle is not red, both because it agrees best with that section in character, and because its nearest ally is *A. Urvilleanum*, Schott, which is placed there by its author.

Descr. *Stem* short, stout, sending forth numerous stout root-fibres. *Leaves* crowded at the top of the stem, narrowly linear, elliptic-lanceolate, accuminate, 1½ to 2 feet long by 2 2–½ in. broad, narrowed to the base, leathery; midrib stout; intra-marginal nerves slender, united to the midrib by numerous erecto-patent nervules; petiole much shorter than the blade, plano-convex, abruptly dilated at the base; articulation at the top about ½ in. long. *Peduncle* larger than the petiole, green, slender. *Spathe* 1½–2 in. long, oblong, rounded at the tip, green, reflexed, base not sheathing. *Spadix* (flowering) 3 in. long by ⅓ in. in diameter, pale yellow green. *Perianth-segments* cubical with acute angles and flat tops. *Filaments* broadly oblong; anthers very small. *Ovary* ovoid, with a sessile discoid stigma, 2–celled; cells 1-ovuled. *Fruiting* spadix 6–8 in. long and 1½ in. diameter; *rachis* very stout, fleshy, pink. *Fruits* the size of a small pea, ovoid, acute, scarlet, 2-seeded.—*J.D.H.*

Fig. 1, Flowers from spadix viewed from above; 2, side view of a flower; 3, stamen and ovary; 4, fruit; 5, transverse section of ditto:—*all enlarged.*



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TAB. 6262.

MASDEVALLIA IONOCHARIS.

Native of Peru.

Nat. Ord. ORCHIDEÆ.—Tribe PLEUROTHALLIDEÆ.

Genus MASDEVALLIA, *Ruiz and Pav.* (*Lindl. Gen. and Sp. Orchid.* p. 192).

MASDEVALLIA *ionocharis*; parvula, dense cæspitosa, foliis cum petiolo 3–4-pollicaribus, lamina elliptico-lanceolata acuta, apice tridenticulato, scapis foliis subæquilongis gracilibus, bractea tubulosa appressa pedicello breviore, perianthio ½-poll. longo campanulato albo-sanguineo 3-lobo, lobis latis abrupte caudatis, caudibus tubo æquilongis stramineis, petalis oblongis basi antice auriculatis apices versus obtusos crenatis, labelli inclusi ungue uncinato, lamina linguæformi apiculata basi cordata disco 2-carinato, columna marginibus fere integris.

M. ionocharis, *Reichb. f. in Gard. Chron.* 1875, p. 388.

The number of *Masdevalliæ* in cultivation increases yearly; in 1830 but three species were known to science, and these only from books, drawings, and dried specimens; 36 are enumerated in the 5th volume of 'Walpers' Annalen', published in 1861, and the number is largely increased since then; of all the known species, probably a third are grown in Europe, and known only by cultivated specimens.

M. ionocharis is one of the smaller species of the genus, and is remarkable for the bright colouring of the flowers that are abundantly produced in autumn. It was made known by Dr. Reichenbach, who published it from specimens discovered by Mr. Davis in Peru, and flowered by Messrs. Veitch in the Royal Exotic Nurseries, to whom the Royal Gardens are indebted for the specimens here figured, which flowered in September, 1875.

DESCR. Densely tufted. *Leaves* with the petiole 3–4 inches long, the blade elliptic-lanceolate, keeled, nerveless; apex with 3 minute teeth; base contracted into a petiole one inch long or upwards. *Scapes* numerous, about as long as the leaves, slender, erect; bract tubular, appressed, shorter than the pedicel. *Flower* white, blotched with red-purple, about ½ in. long. *Sepals* combined into a campanulate 3-lobed tube, which is yellowish and keeled on the back; lobes semicircular, each suddenly contracted into a narrow yellow obtuse rather flexuous tail about as long as the tube. *Petals* oblong, auricled at the base in front, equalling the column, obtusely toothed at the tip. *Lip* included; claw uncinate; limb tongue-shaped, cordate at the base, apiculate at the tip, with two keels down the disk. *Column* with entire margins.—*J.D.H.*

Fig. 1. Pedicel, bract, and flower; 2, flower with the sepals recurved; 3, column and claw of lip; 4, limb of lip:—*all enlarged.*

6263

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Tab. 6263.

LIBERTIA paniculata.

Native of South-East Australia.

Nat. Ord. Irideæ.—Tribe Cypelleæ.

Genus Libertia, *Spreng.* (*Benth. Fl. Austral.* vol. vi. p. 412).

Libertia *paniculata*; rhizomate brevi, caule breviusculo, foliis distichis basi imbricatis elongato-linearibus acuminatis planiusculis carinatis striato-nervosis marginibus lævibus, scapo 1½–3-pedali stricto erecto compresso-angulato ramoso subglanduloso glabrove, ramis suberectis floriferis umbellatis, bracteis membranaceo-scariosis erectis inferioribus elongatis vaginantibus subulatis, superioribus brevioribus, pedicellis inæquilongis, perianthii segmentis obovato-oblongis albidis, filamentis infra medium connatis.

L. paniculata, *Spreng. Syst.* v. i. p. 168. *Benth. Fl. Austral.* vol. vi. p. 413.

Sisyrinchium paniculatum, *Brown, Prod.* p. 305; *F. Muell. Fragment,* vol. vii. p. 91.

Renealmia paniculata, *Brown l.c. Addend.*

Nematostigma paniculatum, *Dietr. Sp. Pl.* vol. ii. p. 510.

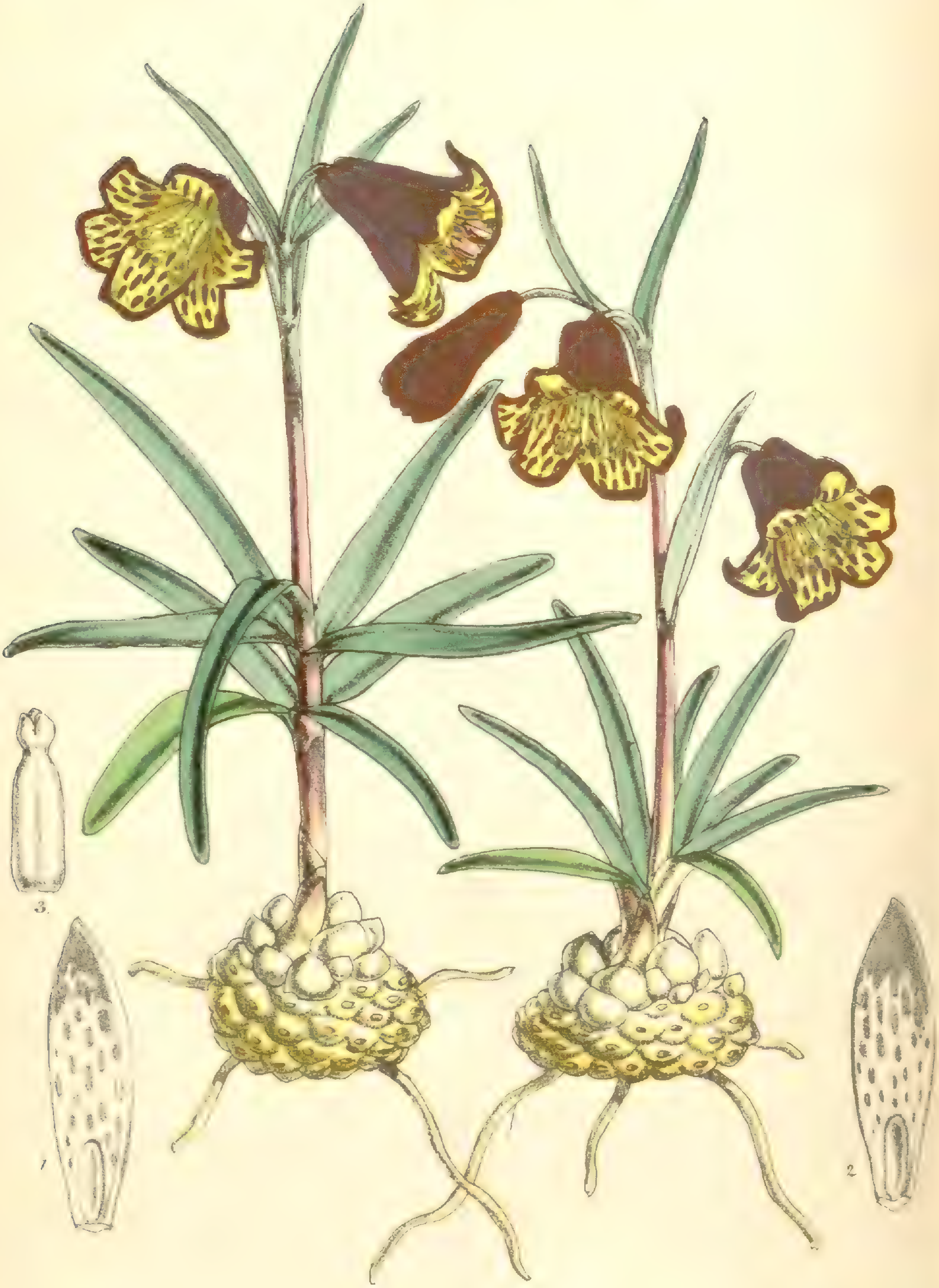
A very elegant and free-flowering greenhouse plant, which has been long cultivated at Kew, having been raised from New South Wales seeds. It flowers early in spring. The genus to which it belongs is confined to Australia, New Zealand, and extra-tropical South America, and contains only 3 or 4 species; it is thus one of several instances of a close botanical relationship between these distant countries. In North America the genus is represented by its near ally *Sisyrinchium*, and which it so much resembles that Brown, who first described this species, referred it to that genus, a view adopted by F. Mueller, though abandoned by Brown in the Addenda to his Prodromus. Bentham keeps it distinct on the grounds adduced by Brown, to which he adds that of the inflorescence. The umbellate appearance of the inflorescence is due to the common peduncle on which the pedicels are arranged being very short indeed; a close examination shows that each pedicel has a bracteole affixed to it, as in other *Irideæ* (see Benth. *l. c.*)

R. paniculata is a native of various hilly districts of New South Wales and of the Australian Alps in Victoria.

Descr. *Rootstock* short, terminated by a tuft of distichous grassy foliage. *Leaves* $\frac{3}{4}$ in. to 1 foot long by $\frac{1}{3}$–$\frac{1}{2}$ in. broad, narrow linear, acuminate, nerved and keeled, margin quite entire. *Stem* or *scape* 1 to 2 ft. high, slender, compressed, with or without a lanceolate-subulate leaf below the inflorescence. *Panicle* long, irregular; branches distant, alternate, almost erect, with a submembranous erect sheathing subulate-lanceolate bract at the base of each. *Flowers* subumbellate; umbels with short, broad, membraneous bracts; pedicels with a bracteole opposite their insertion, strict, slender, lengthening after flowering, jointed under the flower. *Perianth* $\frac{3}{4}$ in. diameter, segment horizontal, narrowly oblong, obtuse, white. *Filaments* erect, slender, connate at the base; *anthers* ellipsoid, yellow. *Ovary* obovoid; *style* short, stigmas 3 spreading horizontally, subulate tips papillose. *Capsule* nearly globose, membranous. *Seeds* numerous, small, angular.—*J.D.H.*

Fig. 1, Stamens, ovary, style, and stigmas; 2, the same with the stamens removed; 3, tranverse section of ovary:—*all enlarged.*

6264



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TAB. 6264.

FRITILLARIA RECURVA.

Native of California.

Nat. Ord. LILIACEÆ.—Tribe TULIPEÆ.

Genus FRITILLARIA, *Linn.* (*Baker in Journ. Linn. Soc.* vol. xiv. p. 251).

FRITILLARIA (Liliorhiza) *recurva;* bulbo magno squamoso, caule glabro erecto semipedali ad bipedali, foliis 6–12 prope medium caulis impositis sessilibus linearibus inferioribus verticillatis, superioribus sparsis, floribus 2–8 laxe racemosis cernuis vel superioribus ascendentibus, pedicellis flore brevioribus, bracteis linearibus foliaceis, perianthii infundibulari-campanulati coccineo-lutei segmentis oblongo-oblanceolatis subacutis subæqualibus prope basin foveolâ obscura anguste oblonga præditis, ovario clavato, stylo ovario duplo longiore apice stigmatoso obscure tricuspidato.

F. recurva, *Benth. Pl. Hartweg.*, p. 340; *Wood in Proc. Acad. Phil.* 1868, p. 167; *Baker in Journ. Linn. Soc.* vol. xiv. p. 272.

In colour this is the finest of all the Fritillaries, the red being as bright as that of a lily, and intermixed, especially in the inside of the flower, with bright yellow. It is a native of California, and belongs to the small group of Fritillaries with lily-like bulbs. It was first described by Mr. Bentham from specimens gathered in 1848 by Hartweg on the mountains of Sacramento, and has since been collected by Fremont, Jeffrey, and many others. We first received specimens, cultivated in Europe from Max Leichtlin, Esq., in 1870. Our stock at Kew was received in 1875 from Mr. Sargent, of the Botanic Gardens at Harvard. The specimens drawn were grown in a pot, and are unusually small. In England it flowers early in May, or at the latter part of April.

DESCR. *Bulb* globose, squamose, sending out copious radicular fibres all round the base. *Stem* erect, glabrous, purple mottled with green, varying from ½ foot to 2 feet in height. *Leaves* 6 to 12, placed all near the middle of the stem; the lower ones in whorls of 3 or 4 each, the upper ones scattered; all linear, sessile, ascending, glabrous, green, 2–4 in. long. *Flowers* 2 to 8 in a terminal raceme, drooping or the upper ascending. *Pedicels* shorter than the flowers, each subtended by a single bract, which is like an ordinary leaf in shape and texture, but smaller. *Perianth* 1–1¼ in.

long, between funnel-shaped and bell-shaped, bright scarlet on the outside ; in the inside spotted with scarlet on a yellow ground ; *segments* subequal, oblanceolate-oblong, subacute, reflexing at the tip when expanded, furnished with an obscure, narrow, oblong nectary at the base. *Stamens* rather shorter than the perianth ; *anthers* small, yellow, oblong. *Ovary* clavate ; *style* twice as long as the ovary, obscurely 3 lobed at the stigmatose tip.—*J. G. Baker.*

Fig. 1, Outer segment of perianth ; 2, inner segment of perianth ; 3, stigmas and upper part of style :—*all magnified.*

6265.

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TAB. 6265.

ODONTOGLOSSUM LÆVE.

Native of Guatemala.

Nat. Ord. ORCHIDEÆ.—Tribe VANDEÆ.

Genus ODONTOGLOSSUM, *H. B. and K.* (*Lindl. Fol. Orchid. Odontoglossum*).

ODONTOGLOSSUM (*Isanthum*) *læve;* pseudobulbis magnis late ovatis ancipitibus, foliis oblongo-lanceolatis acutis, scapo suberecto valido elongato, bracteis parvis late ovatis appressis scariosis, floribus laxe racemoso-paniculatis, perianthio 2-poll. diametr., sepalo dorsali petalisque adscendentibus, sepalis lateralibus deflexis omnibus consimilibus lineari-oblongis subacutis sessilibus cinnamomeis aureo-fasciatis, labello subsessili panduriforme medio recurvo albo disco violaceo 3-carinato, columna apice ala angusta cincta.

O. læve, *Lindl. in Bot. Reg.* 1841, t. 39; *Fol. Orchid. Odontogl.* p. 18; *Walp. Ann.* v. vi. p. 842.

One of the earliest introduced species of the genus, having been sent to England from Guatemala by both Mr. Skinner and Hartweg, and having flowered in the Horticultural Society's Gardens early in 1842. It is fairly well figured in the 'Botanical Register,' but evidently from a plant not so well grown as ours, its pseudobulb being grooved, as if they had shrunk, the leaves being smaller and the flowers duller coloured. It has two described closely allied congeners published since as *Odontaglossa*, viz., *O. Karwinskei*, *Rchb. f.* (Oncidium. *Lindl. Sert. sub. tab.* 20; Cytrochilium, *Lindl. in Bot. Reg. sub. tab.* 1992; Miltonia, *Lindl. in Journ. Hort. Soc.* vol. iv. p. 83, *cum ic.*); and O. Reichencheimii, *Lindl. and Rchb. f. l.c.*) which are probably both forms of the same plant.

O. læve has flowered at Kew repeatedly; for the first time in June, 1864, from plants imported from Guatemala; it is very fragrant.

DESCR. *Pseudobulbs* 3–4 in. long by 2 to 2½ in. broad, compressed with acute edges, smooth, green. *Leaves* 6–10 in. long, oblong-lanceolate, acute *Scape* long, strict, stout. *Flowers* numerous, in racemes that are slightly branched at the base; branches suberect, rachis strict stout; bracts small, broad, scarious, appressed. *Flowers* 2 to 2½ in. from the tip of the dorsal to that of either lateral sepal. *Sepals* and *petals* nearly equal, divaricating, linear-oblong, acute, flat, cinnamon-brown, banded with yellow, the dorsal and petals ascending, the lateral sepals deflexed. *Lip* smaller and shorter than the sepals, sessile, fiddle-shaped, recurved from the middle ; white for the half towards the extremity, violet in the other half, with 5 white ridges. *Column* winged at the tip only around the stigma and anthers.—*J.D.H.*

Fig. 1, lip ; 2, column :—*both enlarged.*

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CONTENTS OF No. 383, NOVEMBER, 1876.

Tab. 6261.—ANTHURIUM BAKERI.
„ 6262.—MASDEVALLIA IONOCHARIS.
„ 6263.—LIBERTIA PANICULATA.
„ 6264.—FRITILLARIA RECURVA.
„ 6265.—ODONTOGLOSSUM LÆVE.

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VII. British Colonisation and Rule.
VIII. Social Progress and Prospects.

ILLUSTRATIONS.

PLATE
1. *Frontispiece.* View on the Palmiet River, near Westville.
2. Physical and Topographical Map of the Colony.
3. Plan of the Inner Bay or Harbour.
4. Sandstone Wall on the shoulder of Pietermaritzburg Table Mountain.
5. Mines at the Diamond Fields on the Vaal River.
6. The Valley of the Umgeni from Table Mountain.
7. The Lower Falls of the Umgeni.
8. Great Fall of the Umgeni at Howick.
9. Glade at Aliceville, with Wild Bananas and Date-palms.
10. Euphorbia Caput-Medusæ.
11. Arduinia grandiflora—Amatungulu.
12. Scarlet Cyrtanthus—Flame-lily.
13. Thunbergia Natalita.
14. Portrait of Langalibalele, Chief of the Amahlubi Kaffirs.
15. Mission on the Hills near Verulam.
16. Kranzkop; overlooking the Tugela Valley.

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AND OF OTHER BOTANICAL ESTABLISHMENTS IN GREAT BRITAIN,
WITH SUITABLE DESCRIPTIONS;

BY

JOSEPH DALTON HOOKER, M.D., C.B., P.R.S., F.L.S., ETC.,
Director of the Royal Botanic Gardens of Kew.

Nature and Art to adorn the page combine,
And flowers exotic grace our northern clime.

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TAB. 6266.

MIRABILIS MULTIFLORA.

Native of New Mexico and California.

Nat. Ord. NYCTAGINEÆ.—Tribe MIRABILEÆ.

Genus MIRABILIS, *Linn.*; (*Endl. Gen. Plant*, p. 311).

MIRABILIS *multiflora*, erecta, robusta, glanduloso-pubescens, caulibus obtuse 4-gonis divaricatim ramosis, nodis tumidis, foliis oppositis ovato-orbiculatis ovatisve acutis v. acuminatis basi rotundatis cordatis v. cordato-2-lobis, floribus magnis terminalibus, involucris pedunculatis pollicaribus cyathiformibus v. campanulatis 4–7 floris, lobis late ovatis, perianthii 2-pollicaris tubo infundibiliforme, limbi explanati lobis rotundatis, staminibus sæpius 5 perianthio æquilongis.

M. multiflora, *A. Gray. in Bot. U.S. and Mex. Bound. Exped.* p. 169; *Porter and Coulter, Synops. Flor. Colorado*, p. 115.

OXYBAPHUS multiflorus, *Torr. in Ann. New York Lyc.* vol. ii. p. 237.

QUAMOCLIDION multiflorum, *Torr. A. Gray in Sillim. Journ. ser.* 2, vol. xv. p. 321.

NYCTAGINIA? Torreyana, *Chois. in DC. Prod.* vol. xiii. part 2, p. 430.

This strikingly beautiful plant was raised from Californian seeds by Mr. Thompson, of Ipswich, who sent flowering specimens to Kew in July of the present year. It has apparently an extensive range, from the forks of the Platte river, in lat. 42° N., where it was discovered by Dr. James in 1820, to Mexico, where it was found near Zacatecas, in lat. 23°, by Coulter, and subsequently in New Mexico by Wright and Fendler. I cannot but, however, suspect some mistake as regards the Mexican locality, no other botanist has found it nearly so far south; and as Coulter collected it also from California, it is possible that there has been a misplacement of tickets, or a confusion of his bundles of plants, which were arranged and distributed after his death by Dr. Harvey, the late accomplished and indefatigable keeper of the Herbarium of Trinity College, Dublin (of which Dr. Coulter was Professor of Botany). The perianth lobes, which are described as acuminate by Torrey, Porter, and Coulter, are retuse in our specimens.

Descr. A tall stout much-branched herb, clothed everywhere with a glandular pubescence, which varies much in quantity. *Branches* obscurely quadrangular, divaricating, tumid at the nodes. *Leaves*, 3–4 inches long, opposite, petioled, ovate, orbicular-ovate, or ovate-cordate, acute or acuminate, rarely obtuse, sometimes 2-lobed at the base, rather thick, quite entire, nerves spreading; petiole stout. *Flowers* in terminal panicles with opposite branches, four to seven together, in the green cup-shaped or bell-shaped peduncled involucre, which is about 1 inch long, and has 4 to 5 short broad acute or obtuse erect lobes. *Perianth* bright purple; tube 2 inches long, funnel-shaped; limb flat, 5-lobed, lobes rounded notched at the tip. *Stamens* 5–6, hardly exserted; anthers small, yellow. *Style* very long and slender; stigma capitate.—*J. D. H.*

Fig. 1, Ovary and style of the *natural size*.

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Tab. 6267.

TURRÆA obtusifolia.

Native of South Africa.

Nat. Ord. Meliaceæ.—Tribe Melieæ.

Genus Turræa, *Linn.* (*Benth. et Hook. f. Gen. Plant.* vol. i. p. 331).

Turræa *obtusifolia*; glaberrima, ramis virgatis, foliis 1-2-pollicaribus obovatis v. oblanceolatis obtusis integris v. obtuse 3-lobis basi angustatis subsessilibus v. breviter petiolatis, nervis obscuris, floribus solitariis v. paucis pedunculatis, calycis glaberrimi dentibus acutis, petalis 1-1½-pollicaribus longe unguiculatis anguste spathulatis, tubo stamineo anguste cylindraceo, ore multifido, segmentis subulatis stellatim patentibus, ovario 5-loculari, stigmate malleiforme truncato sulcato, capsula globosa 3-valvi coriacea, seminibus dorsorotundatis.

T. obtusifolia, *Hochst. in Flora*, vol. xxvii. *pars* 1, p. 296; *Harv. et Sond. Fl. Cap.* vol. i., p. 245; *Oliver, Fl. Trop. Afric.* vol. i. p. 331.

A native of woods and bushy places in the eastern districts of South Africa, extending from Albany to Natal, apparently most common in the eastward; it also occurs as far north as Lake Ngamo in latitude 21° south, where it was gathered by McCabe, and in Sechualis country, the specimens from whence have narrower leaves.

The genus *Turræa* consists of pretty white-flowered shrubs and small trees of tropical Asia and Africa; about sixteen species are known. *T. obtusifolia* was raised from seeds sent to the Royal Garden by H. Hutton, Esq., of Graafreinet, in 1872, which flowered in the present year.

Descr. A shrub 4-6 feet high, with slender strict branches, everywhere except the young foliage, quite glabrous. *Leaves* alternate and fascicled, three-quarters to one and a quarter or one and a half inches long, obovate or ob-lanceolate, obtuse, entire or obtusely 3- rarely 5-lobed above the middle, gradually narrowed into a very short petiole, bright green, nerves obscure. *Flowers* inodorous, axillary, solitary or a few fascicled together; peduncles slender, with minute bracts at the base; much shorter than the leaves. *Calyx* small, campanulate, shortly 5-toothed, glabrous. *Petals* one to one and a half inches long, with long slender erect claws gradually dilating into a spathulate or oblong or elliptic obtuse entire or obscurely sinuate spreading limb. *Staminal-tube* shorter than the petals, slender, slightly dilated upwards; mouth fimbriate, the numerous subulate segments spreading like a star; anthers small, oblong, obtuse. *Stigma* mallet-shaped, truncate, sides grooved, top glandular. *Ovary* 5-celled. *Capsule* as big as a small hazel, glabrous, black, coriaceous, valves white inside. *Seeds* rather large, convex on the back.—*J. D. H.*

Fig. 1. Flower with petals removed; 2, portion of mouth of staminal tubes with anthers and processes; 3, stigma; 4, ovary; 5, transverse section of ditto:—*all enlarged.*

6268.

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Tab. 6268.

MASDEVALLIA TRIARISTELLA.

Native of Costa Rica.

Nat. Ord. Orchideæ.—Tribe Pleurothallideæ.

Genus Masdevallia, *Ruiz et Pav.* (*Lindl. Gen. et Sp. Orchid.* p. 192).

Masdevallia *triaristella*; parvula, dense cæspitosa, foliis cum petiolo perbrevi 1–1½-pollicaribus strictis subulatis teretibus apiculatis antice canaliculatis, scapis folia excedentibus 1–2-floris capillaribus verruculosis, vaginis parvis remotis, sepalo dorsali ovato concavo in caudam flexuosam lamina triplo longiore producto, lateralibus in laminam navicularem lineari-oblongam apice emarginatam utrinque ultra medium cauda flexuosa instructam connatis, petalis oblongo-linearibus apice obtuse 3-dentatis, labello linguæformi basi profonde 2-lobo, columna clavata.

M. triaristellata, *Reichb. f. in Gard. Chron.* (1876), p. 226 *et* 559 (*Ic. xylog.*)

Dr. Reichenbach well remarks of this singular little plant, that it constitutes (with another unnamed one in his herbarium) an entirely new section of *Masdevallia*, to be called *Triaristellæ*, and which he tells me forms a curious approach to *Restrepia*. Of the latter genus two species have been figured in this work; *R. Lansbergii*, tab. 5257, and *R. elegans*, t. 5966; a comparison of them with *M. triaristella* clearly shows the relationship indicated by Dr. Reichenbach; still the different form of the petals and club-shaped tails of *Restrepia* abundantly separates the two genera.

Masdevallia triaristella was discovered in Costa Rica by Endres, and flowered by Messrs. Veitch, who forwarded the specimen for figuring in this work in September last.

Descr. Dwarf, densely tufted. *Leaves* erect, 1 to 1½ inch long, slender, subulate and narrowed to both ends, cylindric, channelled down the face; petiolar portion very short, sheathed. *Scapes* 1–2-flowered, very slender and rigid, almost capillary, rough with minute warts, bearing two or more distant short appressed sheathes which are truncate at the mouth. *Flowers* nearly an inch long, red-brown with yellow tails and the sepals suffused with yellow towards the base. *Ovary* very short. *Dorsal sepal* small, ovate, concave, suddenly contracted into a flexuous ascending tail about half an inch long; lateral sepals combined into a linear-oblong boat-shaped straight limb which is notched at the tip, and bears on each margin beyond the middle a flexuous filiform tail of about the same length as that of the dorsal sepal. *Petals* linear-oblong, erect, obtusely 3-toothed at the tip. *Lip* tongue-shaped, recurved and with recurved margins, deeply 2-lobed at the base, grooved down the centre. *Column* club-shaped.—*J. D. H.*

Fig. 1. Leaf; 2, transverse section of do.; 3, top of scape and flower; 4, lateral view of flower; 5, do. with sepals removed:—*all enlarged.*

6269

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TAB. 6269.

MUSCARI ÆSTIVALE.

Native country unknown.

Nat. Ord. LILIACEÆ.—Tribe HYACINTHEÆ.

Genus MUSCARI, *Tourn.* (*Baker in Journ. Linn. Soc.* vol. xi. p. 411).

MUSCARI (*Moscharia*) *æstivale*; bulbo ovoideo tunicato, foliis 5–6 anguste linearibus viridibus pedalibus facie profunde canaliculatis, scapo semipedali maculato, racemo subspicato 30- 40-floro superne denso, floribus inferioribus luteis, superioribus purpurascentibus, bracteis minutis linearibus, perianthio oblongo infra oram angustam 6-umbonato dentibus minutis patulis deltoideis, staminibus biseriatis antheris purpureis, stylo cylindrico ovario oblongo breviore.

This is a near neighbour of that old and well-known garden favourite, the Musk Hyacinth, *Muscari moschatum*, of which the typical form is figured, Bot. Mag. tab. 734, and a yellow flowered variety, the *M. macrocarpum* of Sweet, at tab. 1565. Besides its botanical characters, our present plant differs from *moschatum* by its faint scent and much later time of flowering. It came from the rich bulb collection of H. J. Elwes, Esq., of Miserdine House, Cirencester. The drawing having been made from specimens that flowered in his garden at the middle of June, 1875. He procured it from Messrs. Haage and Schmidt, of Erfurt, and does not know its exact country, but no doubt, like its allies, it comes from some part of the rich Oriental region. Another curious form which he brought to Kew at the same time, I have already described in the *Gardeners' Chronicle*, under the name of *M. moschatum*, var. *creticum*.

DESCR. *Bulb* ovoid, an inch and a half in diameter, with brown membranous tunics. *Leaves* five or six, contemporary with the flowers, narrow linear, about a foot long, one sixth to one fourth inch broad, bright green, fleshy glabrous, deeply channelled down the face. *Scape* firm, terete, half a foot long, erect, mottled with purple. *Raceme* subspicate, the upper flowers being quite sessile, and only the lower ones furnished with very short pedicels three to four inches long, 30–40 flowered, the lower flowers yellow with green ribs, the upper ones tinged with purple; bracts minute, linear. *Perianth* oblong, one fifth to one fourth in. long, furnished with six prominences below the very narrow throat, from which the six minute deltoid segments are recurved. *Stamens* biseriate, the three lower inserted about the middle of the tube; filaments short, incurved; anthers roundish, lilac-purple. *Pistil* about half as long as the perianth. *Style* shorter than the oblong ovary; stigma capitate.—*J. G. Baker.*

Fig. 1, Perianth complete; fig. 2, vertical section of the same:—*both enlarged.*

6270

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TAB. 6270.

MONARDELLA MACRANTHA.

Native of California.

Nat. Ord. LABIATÆ.—Tribe SATUREINEÆ.

Genus MONARDELLA, *Benth.* (*Benth. et Hook. f. Gen. Plant.* vol. ii. p. 1185).

MONARDELLA *macrantha;* perennis, pubescens v. puberula, rhizomate repente, caulibus depressis procumbentibus v. ascendentibus, foliis ovatis obtusis integerrimis, floribus capitatis, bracteis ovatis obtusis viridibus, calyce elongato-oblongo, dentibus ovatis acutis, corollæ coccineæ tubo longe exserto, lobis lineari-oblongis subacutis, antherarum loculis brevibus divaricatis.

M. macrantha, *A. Gray in Proc. Amer. Acad. Arts and Sc.* vol. xi. p. 100, (*Jan.* 1876) *et in Botany of California*, 593.

A very beautiful, highly aromatic Californian plant, described by Asa Gray very recently, and apparently local, as he gives but three localities for it, namely, the Cuiamaca Mountains, near Julian city, and north-east of San Diego. Our cultivated specimens differ from Gray's description in the close heads of flowers, in the corolla not reaching an inch and a half in length, and in its brighter colour, being more scarlet than orange-red. It was raised by Messrs. Veitch from Californian seeds, and flowered in October of the present year.

The genus *Monardella* is confined to temperate N.W. America, and is the largest of the order *Labiatæ* in that region, numbering eleven species, and representing in a degree the Origanums (Marjorams) of the old world. The rarity of this very large order in temperate N. America is one of the characteristic features of the flora of that wide region of the globe, and it is the more anomalous when it is considered that the climate of California especially would appear to be peculiarly adapted to those highly aromatic plants, which abound in the analogous climates of the old world. The same remark applies to the natural order *Umbelliferæ*, which abound in similar climates of the old world.

DESCR. A low perennial, with creeping rootstock and slender cylindric tufted stems that are procumbent or ascending, more or less pubescent or almost glabrate. *Leaves* small, one half to three-quarters of an inch long, petioled, ovate, obtuse, quite entire; petiole shorter than the blade, spreading or recurved; bracteal leaves sessile, like the cauline, but more membranous and pubescent, green or almost white. *Flowers* ten to twenty in a close sessile terminal head. *Calyx* one half of an inch long, narrowly oblong or rather inflated below, green, striate, terete, tomentose; teeth 5, short, erect, ovate, acute. *Corolla* slender, scarlet; tube three times as long as the calyx, rather inflated above; lobes oblong-lanceolate, not one-third the length of the tube. *Stamens* exserted; anthers small, lobes broadly-oblong, divaricate. *Ovary* small, on a nearly equal disk; style slender; stigma 2-fid. —*J. D. H.*

Fig. 1, Flower; 2, the same with the corolla laid open; 3, tip of filament and anther; 4, ovary disk and base of style:—*all enlarged.*

6271

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TAB. 6271.

KERAMANTHUS KIRKII.

Nat. Ord. PASSIFLOREÆ.—Tribe MODECCEÆ.

New Genus KEMARANTHUS, *Hook. f.*

Flores unisexuales. *Fl.* ♂. *Calycis* tubus elongato-urceolatus; lobi 5, breves, erecti, imbricati. *Petala* 5, medio tubo calycis inserta, inclusa, parva, filiformi-subulata. *Annulus coronalis* e cornubus 5–6 fundo calycis inserta, recurva. *Stamina* 5–6, fundo calycis inserta, filamentis brevibus subulatis basi connatis; antheræ lineari-oblongæ, apiculatæ. *Ovarii* rudimentum minutum. *Fl.* ♀ *Perianthium* et corona maris. *Staminodia* subulata. *Ovarium* globosum, stipitatum; stylus brevis, 3-fidus, stigmatibus plumosis; ovula placentis 3 affixa. *Bacca* globosa, indehiscens, coriaceæ, polyspermæ. *Semina* compressa, arillo sacciformi inclusa; testa crustacea, foveolata. Frutex Zanzibaricus *herbaceus, tomentosus, caulibus e radice magno paucis erectis crassis subsimplicibus viridibus.* Folia *alterna, ovato-* v. *cordato orbiculata subsinuato-dentata, mollia.* Stipulæ *subulatæ.* Cirrhi 0. Pedunculi *axillares,* 1-*pauciflori, robusti, bracteolis paucis subulatis.* Flores *semipollicares, erecti, virides, cum pedicello articulati.* Baccæ *mole pomi parvi.*

KERAMANTHUS *Kirkii.* Hook. f.

Male specimens of this very singular plant have been in cultivation at Kew for some years, whose flowers were so entirely similar to those of *Modecca*, whilst it differs so remarkably in habit from that genus that I have hitherto hesitated to publish it.

The female flower I know only from a sketch made on the spot by its discoverer, Dr. Kirk, who has also sketched the fruit, but without signifying whether it is dehiscent or not; the former are, like the males, identical with those of *Modecca*, but the fruit differs according both to the appearance as represented by Dr. Kirk, and to a description which Dr. Masters informs me is attached to a very imperfect specimen preserved in the Paris Museum, in being baccate. This description is by Boivin, who gathered the plant at Zanzibar, and says of the fruit that is a globose berry, smooth, indehiscent, size of an apricot, dry, coriaceous externally, and of a chesnut colour. I am informed by Dr. Ascherson that there are also specimens in the Berlin Herbarium, collected by Hildebrant, which have been examined by Professor Braun, and referred to *Modecca.*

Having regard to the baccate fruit, the remarkable habit, absence of tendrils, and conspicuous stipules, I am disposed to regard this as a new genus, and to call it *Keramanthus*, in allusion to the pitcher-like form of the calyx.

Keramanthus Kirkii is stated by Dr. Kirk to be very common at Zanzibar, where it is planted, like the *Jatropha Curcas*, to mark the site of graves. It flowers at Kew during the greater part of the year; our tallest plant is 2 feet high.

DESCR. Softly tomentose, with weak spreading hairs. *Stems* 3 to 4 feet high, numerous from the root, strict, erect, as thick as the arm at the base, tapering upwards, cylindric, green and herbaceous but perennial, simple or sparingly branched, leaf-scars small remote. *Leaves* towards the top of the stems, alternate, spreading, petioled, two to four inches in diameter, orbicular-ovate, obtuse, usually deeply cordate at the base, obscurely sinuate-toothed, soft, pale bright-green; nerves very prominent beneath; petiole shorter than the blade, peltately attached. *Stipules* lateral, subulate, entire or lacerate. *Flowers* in axillary 2–3-flowered erect peduncles, which are shorter than the petiole; pedicels one half to two inches long, erect, jointed below the perianth, with 1–2 subulate bracteoles at the base. *Calyx* one to one and a half inch long, oblong-urceolate, green, fleshy, tomentose, rounded at the base, terete; lobes 5 small, triangular-ovate, tomentose on the thickened margins. *Petals* included, inserted halfway down the calyx-tube, distant, linear-subulate, ciliate and sometimes cleft in the male flower (glabrous in the female fl. *Kirk*). *Corona* of 5–6 recurved hooked processes at the base of the perianth, and placed opposite to the stamens. *Stamens* in the male fl. 5 or 6 (reduced to subulate staminodes in the female, *Kirk*); filaments subulate, connate at the base; anthers linear-oblong, apiculate. *Ovary* in the female fl., globose, stipitate (reduced to a minute ovoid body in the male). *Styles* 3, united at the base; stigmas capitate plumose; placentas 3; ovules numerous, horizontal, funicle not very long. *Fruit* one to one and a half inches in diameter, globose, drooping, indehiscent, coriaceous, many-seeded. *Seeds* numerous, one-half inch long, oblong, flattened, enclosed in the sac-like fleshy aril, which is truncate at the summit; testa scrobiculate—*J. D. H.*

Fig. 1. Male flower cut vertically:—*enlarged*.

INDEX

To Vol. XXXII. of the Third Series, or Vol. CII. of the Work.

Pl.	
6248	Agave Botterii.
6225	Ainsliæa Walkeri.
6227	Allium anceps.
6210	Androsace sarmentosa.
6218	Anthurium Saundersii.
6261	Anthurium Bakeri.
6232	Arundo conspicua.
6252	Begonia Davisii.
6209	Blandfordia flammea, var. princeps.
6244	Bongardia Rauwolfii.
6221	Bouchea pseudogervaô.
6231	Calceolaria tenella.
6259	Calliphruria Hartwegiana.
6241	Coreopsis (Tuckermannia) maritima.
6239	Cosmibuena obtusifolia, var. latifolia.
6235	Cotyledon teretifolia.
6211	Crocus Weldeni.
6206	Cucumis sativus, var. Sikkimensis.
6213	Cypella Peruviana.
6217	Cypripedium Roezli.
6226	Dendrobium fuscatum.
6257	Downingia pulchella.
6234	Dracæna Saposchnikowi.
6253	Dracæna fruticosa.
6245	Duvalia polita.
6219	Episcia erythropus.
6246	Eulophia macrostachya.
6264	Fritillaria recurva.
6249	Gamolepis euryopoides.
6238	Heptapleurum polybotryum.
6228	Hoodia Gordoni.
6224	Hypoestes aristata.
6260	Icacina Mannii.
6271	Keramanthus Kirkii.
6247	Leucothoe Davisiæ.
6263	Libertia paniculata.
6250	Lilium Phillipinense.
6251	Lycaste lasioglossa.
6208	Masdevallia ephippium.
6258	Masdevallia polysticta.
6262	Masdevallia ionocharis.
6268	Masdevallia triaristella.
6236	Milla Leichtlinii.
6266	Mirabilis multiflora.
6270	Monardella macrantha.
6233	Monopyle racemosa.
6243	Moricandia sonchifolia.
6269	Muscari æstivale.
6207	Nicotiana tabacum, var. fruticosa.
6229	Odontoglossum prænitens.
6237	Odontoglossum Hallii.
6265	Odontoglossum læve.
6254	Oncidium stramineum.
6256	Oxalis enneaphylla.
6214	Pescatoria Dayana, var. rhodacra.
6240	Pescatoria lamellosa.
6222	Saccolabium Hendersonianum.
6223	Sedum pulchellum.
6216	Senecio (kleinia) chordifolia.
6255	Serapias papilionaceo-lingua (hybrid).
6212	Stapelia olivacea.
6220	Talinum Arnotii.
6242	Tulipa Hageri.
6267	Turræa obtusifolia.
6215	Viburnum dilatatum.
6230	Vitex Lindeni.

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CONTENTS OF No. 384. DECEMBER, 1876.

Tab. 6266.—MIRABILIS MULTIFLORA.
„ 6267.—TURRÆA OBTUSIFOLIA.
„ 6268.—MASDEVALLIA TRIARISTELLA.
„ 6269.—MUSCARI ÆSTIVALE.
„ 6270.—MONARDELLA MACRANTHA.
„ 6271.—KERAMANTHUS KIRKII.

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IV. Wild Animal Life.
V. Indigenous Vegetable Productions.
VI. Early History.
VII. British Colonisation and Rule.
VIII. Social Progress and Prospects.

ILLUSTRATIONS.

PLATE
1. *Frontispiece.* View on the Palmiet River, near Westville.
2. Physical and Topographical Map of the Colony.
3. Plan of the Inner Bay or Harbour.
4. Sandstone Wall on the shoulder of Pietermaritzburg Table Mountain.
5. Mines at the Diamond Fields on the Vaal River.
6. The Valley of the Umgeni from Table Mountain.
7. The Lower Falls of the Umgeni.
8. Great Fall of the Umgeni at Howick.
9. Glade at Aliceville, with Wild Bananas and Date-palms.
10. Euphorbia Caput-Medusæ.
11. Arduinia grandiflora—Amatungulu.
12. Scarlet Cyrtanthus—Flame-lily.
13. Thunbergia Natalita.
14. Portrait of Langalibalele, Chief of the Amahlubi Kaffirs.
15. Mission on the Hills near Verulam.
16. Kranzkop; overlooking the Tugela Valley.

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